



Readiness



Retention



Response

USUHS



Uniformed Services University
of the Health Sciences

Journal
1999 Edition

Editor-in-Chief

Mary A. Dix

Vice President for Administration
and Management

**Uniformed Services University of the Health Sciences
4301 Jones Bridge Road
Bethesda, Maryland, 20814-4799
Telephone: (301) 295-3013
WWW address: [HTTP://WWW.USUHS.Mil](http://www.usuhs.mil)**

UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES
F. EDWARD HEBERT SCHOOL OF MEDICINE
4301 JONES BRIDGE ROAD
BETHESDA, MARYLAND 20814-4799
<http://www.usuhs.mil>

OFFICE OF THE
PRESIDENT

March 22, 2000

TO: _____

SUBJECT: The USUHS Journal - 1999 Edition and the New Millennium

Editor's Foreword

Sixty activity heads, chairs, faculty, and staff participated in the preparation of the University's annual report for 1999. Our reporting format has been expanded to provide a more inclusive background on the history and development of the University, as well as the achievements of 1999. The Historical/Reference Document for 1999 was renamed as the USUHS Journal - 1999 Edition. It will serve as a source document for the University's responses to congressional, executive and general requests for information. All of the products and services described in the USUHS Journal are recognized by the Office of the Secretary of Defense. In addition, the University's products and services meet the special requirements of the Military Health System (MHS) as directed or identified by the establishing legislation, the Department of Defense (DoD), the Surgeons General, and the Federal Nursing Chiefs.

The University community enters the new Millennium with a renewed dedication to public service and with focused attention on the critical nature of its mission. USUHS is the Nation's only University dedicated to the provision of uniformed health care to ensure readiness, retention, force health protection, the medical response to natural and man-made disasters, and medical support to humanitarian missions. The USUHS Journal clearly illustrates that the University has met, or has exceeded, the goals set by the early visionaries who established USUHS to ensure continuity and leadership for the MHS:

Representation: Where Congress envisioned that the USUHS School of Medicine graduates would equal ten percent of the total physician force, the 2,497 USUHS physicians on active duty represent twenty percent of the total MHS force of approximately 12,447 physicians (see pages 10 and 53).

Retention: Congress had originally envisioned retention rates close to 70 percent; the overall retention rate for USUHS graduates is 91 percent; of which, over 81 percent remain on active duty after having completed their service obligation. USUHS graduates are ensuring continuity as they serve in senior leadership and operational positions throughout the MHS. A recent review conducted in February of 1999 documented that of the first six classes of USUHS SOM graduates, from 1980 through 1985, 408 alumni remained on active duty; and, of those 408 alumni, 170 (42 percent) held senior operational or leadership positions (see pages 52-56).

Readiness: Operational assignments, early promotions into leadership positions, and a unique understanding of the special requirements of health care under deployed and multi-Service conditions are significant attributes exhibited by the USUHS alumni. Following an intensive review, the General Accounting Office confirmed that "43 out of 44 commanders of major military medical units perceived that physicians from the University have a greater overall understanding of the military, greater

commitment to the military, better preparation for operational assignments, and better preparation for leadership roles" (see page 55). In addition, as discussed on page 59, USUHS' military unique training includes "approximately between 784 and 889 hours of initial military education and medical readiness training compared to that provided to the Health Professions Scholarship graduates whose training ranges from 50 to 132 hours ..." (General Accounting Office Report, "Military Physicians - DoD's Medical School and Scholarship Program," September 29, 1995, pages 41 and 43).

Response: USUHS was also recognized in 1998 by the Association of American Medical Colleges as the "one place where the physicians of tomorrow do get thorough preparation to deal with many contingencies, including the medical aspects of chemical and biological terrorism. USUHS students learn how nuclear, biological, and chemical agents act on the human body and what to do in the event of a suspected exposure - from detection to decontamination and medical countermeasures." The provision of health care under deployed conditions requires a solid background in tropical medicine and hygiene, parasitology, and the use of epidemiologic methods and preventive medicine. USUHS students are provided with approximately 130 hours of study in these areas, compared to about 13 hours found in the typical civilian medical school curriculum (discussed on page 59).

The University serves as the Academic Center for the collaborative academic and research activities of 2,410 active-duty, off-campus USUHS faculty located throughout the MHS. In addition, the University's fully accredited and OSD recognized programs provide military-unique training while generating annual cost-avoidance for the MHS:

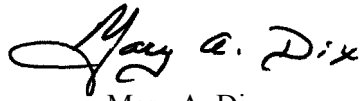
Simulated Readiness Training: During 1999, the University continued to expand its significant advancements in the use of advanced training technology. In September, the National Capital Area Military Medical Simulation and Readiness Center (a collaborative effort between the University and the Surgeons General) began training and testing military physicians, nurses, and medical students. This state-of-the-art teaching facility allows health professionals to augment their skills through patient simulations, virtual reality applications, and training with mannequin simulators. The advanced patient simulator presents scenarios applicable to combat casualty care, anesthesia, critical care, trauma, and emergency medicine. The Center will also provide surgery that is simulated through virtual reality and an interactive computer-based testing laboratory. Cost-avoidance will be generated by the Center through the provision of readiness training, distance learning, and computer-based testing training for the MHS (see pages 35-37).

Clinical Support at Military Treatment Facilities: In 1999, during their course of teaching, the University faculties of the School of Medicine (SOM) and the Graduate School of Nursing (GSN) self-reported the provision of over 130,000 hours of health care at the National Naval Medical Center, the Walter Reed Army Medical Center, and the Malcolm Grow Air Force Medical Center. The patient care and special services provided by the USUHS faculties eliminates the requirement for the MHS to increase its staff by 130,000 work hours or to significantly increase the use of commercial sources (SOM and GSN faculties are described in pages 96-103 and 131-132).

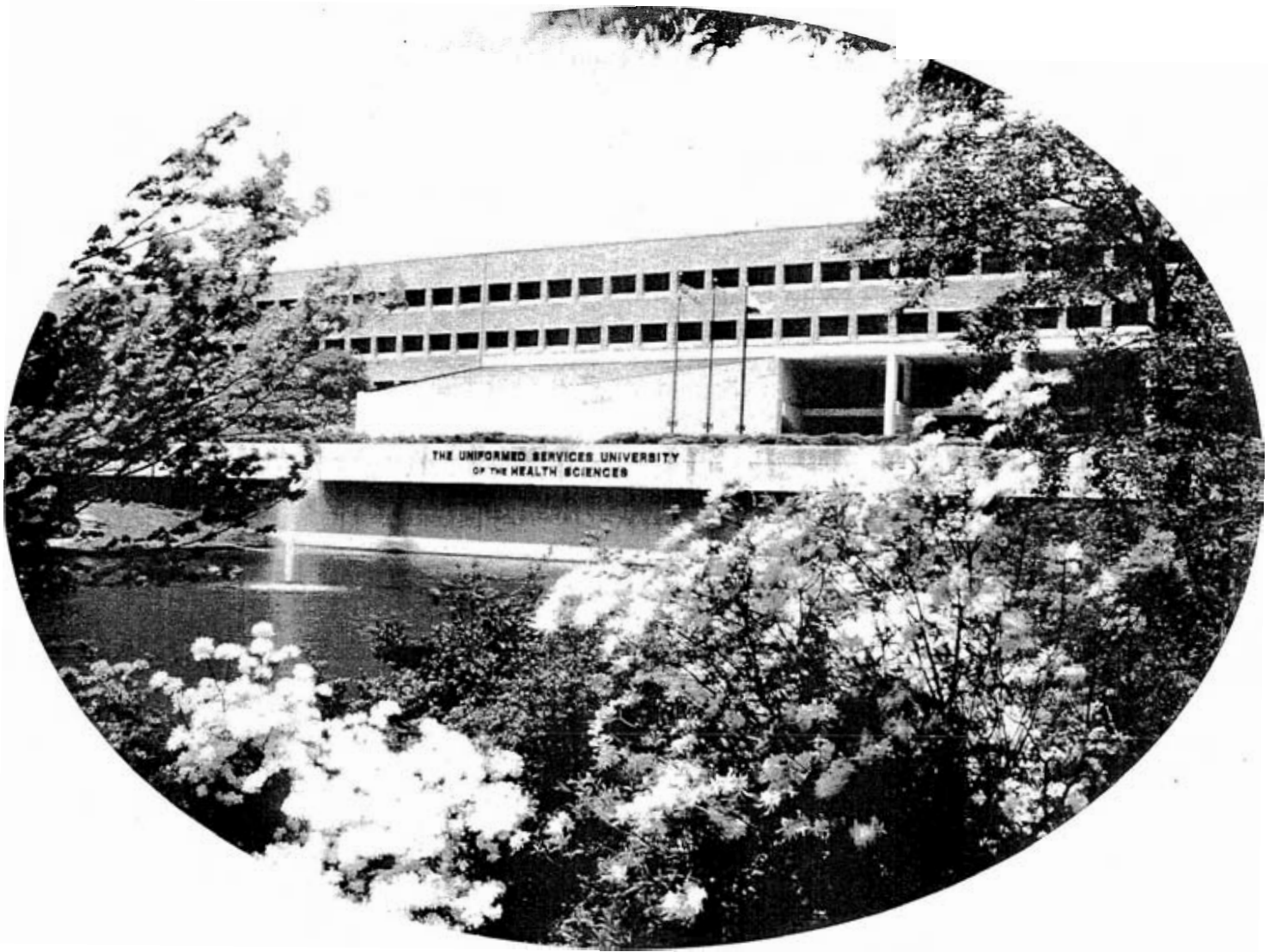
Continuing Education Programs: During 1999, the University sponsored continuing medical education for 268 programs for 4,068 physicians; and, continuing nursing education for 35 activities with an attendance of 2,148 nurses. Because the University brings training to the health care professionals an estimated cost avoidance of \$2.2 million was generated for DoD by the elimination of travel expenses and time away from the hospitals and clinics. In a similar manner, the DoD sites affiliated with the University's Military Training Network (MTN) are approved to conduct self-sustained resuscitative and trauma medicine training. During 1999, approximately 209,419 defense personnel were trained through the MTN with a generated cost avoidance of approximately \$10.6 million (pages 177-185).

Advanced Degrees Earned Through Distance Learning: In 1999, the distance learning collaborative efforts of the Graduate School of Nursing (GSN) with the Department of Veterans Affairs (VA) successfully demonstrated a cost-effective form of advanced education where nursing students received advanced training in critical specialty areas while maintaining their current positions. Twenty-six students, through a virtual commencement exercise, graduated from the VA/DoD Distance Learning Program on May 18, 1999; all graduates are eligible to sit for the American Nurses Association Credentialing Examination for Adult Nurse Practitioners. This graduation marked the first virtual advanced-level graduation by either the VA or the DoD. The experience gained by both the GSN and the VA will allow future projects in distance learning to benefit from the lessons learned and the technologies tested during the twenty-month program. Thirty-five students are currently enrolled as members of the Distance Learning Class of 2001 (pages 146-153).

USUHS is the Nation's only University dedicated toward the provision of continuity and leadership for the Uniformed Services. OSD's recognition of the University's multiple products and services, combined with the placement of the University within the 1998 Defense Reform Initiative, are of significant importance to the future of the University. As we move into the 21st Century, the University's focus remains on mission accomplishment, the provision of quality programs offered in a cost-effective manner, and the consistent assessment of its products and services.

A handwritten signature in black ink, reading "Mary A. Dix". The signature is fluid and cursive, with the first letters of each word being capitalized and prominent.

Mary A. Dix
Editor-in-Chief



"Data is now available to document that the USUHS graduates are exceeding the goals established by its Congressional founders. USUHS graduates continue to earn respect and praise in their medical specialties. They represent the core leadership in areas of military medicine ranging from special operations and hospitals, to the White House, Bosnia deployments, and to assignments aboard ships at sea. USUHS graduates continue to provide a strong cadre of leaders who assure the continuity of military medicine and medical readiness...USUHS is a national treasure and a vital element essential to military and public health readiness."

- **The American Legion**, letter provided to the members of the United States Senate, dated February 17, 1999.

UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES JOURNAL

1999 EDITION

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APPENDIX C -	SELECTED EXAMPLES OF BILLETED AND OFF-CAMPUS MEMBERS OF USU DEPARTMENTS AND PROGRAMS WHO RECEIVED SPECIAL RECOGNITION DURING 1999

I. THE UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES (USU)

USU, as part of the Military Health System (MHS), is committed to academic programs which provide physicians and advanced practice nurses uniquely skilled in the readiness requirements of joint operations; the development of uniformed officers to ensure leadership and continuity for uniformed health care; and, the provision of nationally recognized continuing education credit throughout the MHS.

ESTABLISHMENT, DEVELOPMENT, AND GOVERNANCE

The Uniformed Services Health Professions Revitalization Act of 1972 Establishes the University. Public Law 92-426, the Uniformed Services Health Professions Revitalization Act of 1972, established the University as a separate agency within the Department of Defense (DoD). Planning for the development of USU began with **President Richard Nixon's** appointment of a Board of Regents and **Dr. Anthony R. Curreri** as the University's first President in 1974. Initial efforts were focused on establishing the USUHS School of Medicine (SOM) as the University's first academic program.

Collaborative Effort by the Joint Services and Civilian Medical Communities in the Development of the University. The initial development of objectives for the USUHS SOM was accomplished through the combined efforts of the Board of Regents; the Board of Regents Educational Affairs Committee; **Dr. Curreri**; the USUHS SOM Dean, **Dr. Jay Sanford**; and, special working groups. Activities used to develop these objectives included committee meetings, retreats, and consultation with a variety of experts from military medicine and civilian medical organizations and institutions. Individuals and groups consulted included: the Surgeons General of the Army, Navy, and Air Force; Chiefs of the Medical Departments/Services of the Army, Navy, and Air Force; physicians from the Walter Reed Army Medical Center, the National Naval Medical Center at Bethesda, Malcolm Grow U.S. Air Force Medical Center at Andrews Air Force Base, Wilford Hall U.S. Air Force Medical Center, the U.S. Army Academy of Health Sciences, Sheppard Air Force Base Academy of Health Sciences, Brooke Army Medical Center, and the Armed Forces Institute of Pathology; the Secretary of the Air Force; the Secretary of the Navy; the Association of American Medical Colleges (AAMC); the American Medical Association (AMA); the Liaison Committee on Medical Education (LCME); the Department of Health, Education, and Welfare; the National Institutes of Health (NIH); George Washington University; Georgetown University; and, Howard University. The fine tradition of the University's identifying and meeting the special needs of the Uniformed Services has been an on-going process since 1974.

DoD Directive 5105.45. On April 15, 1991, the Secretary of Defense revised DoD Directive 5136.1 to delegate responsibility for the University from his office to the Assistant Secretary of Defense for Health Affairs (ASD/HA). The authority to appoint the President of the University was retained by the Secretary of Defense. On April 19, 1991, the DoD Directive for USU, 5105.45, was updated to reflect

those changes and to define in detail the mission, organization, responsibilities, functions, relationships, authorities, and governance of the University (a copy of DoD Directive 5105.45 is at Appendix A).

In a DoD (Health Affairs) memorandum dated May 3, 1991, the ASD/HA re-delegated to the USUHS president the authority for the day-to-day management of the University. (The current delegation of authority to the USUHS President for the on-going management of the University is also included in DoD Directive 5105.45, dated May 17, 1999.) Significant changes in the USU governance structure resulted from actions taken in 1991. The Board of Regents (BOR) had been an independent policy-making body; it is now an advisory body to the Secretary of Defense. A new charter for the BOR was approved by DoD on April 1, 1991. It defines the objectives and scope of the BOR to: 1) provide advice and guidance to the Secretary of Defense through the ASD/HA for the operation of USU; and, 2) assure that the University's operation is in compliance with the appropriate accreditation authorities. The USU administration and faculty provided substantial input into these administrative/governance documents. As a result, the final documents of 1991 reflected the coordinated efforts of the ASD/HA, the BOR, the USU administration and activity heads, SOM department chairpersons, the SOM Faculty Senate, and the Dean's Executive Advisory Committee. In addition, during this process, the Acting Dean of the SOM coordinated with and briefed the LCME and the Middle States Association to ensure compliance with the University's accrediting entities on issues regarding governance and administration.

USU - The 1998 Defense Reform Initiative. In November of 1997, **William Cohen, Secretary of Defense**, substantiated his support of the University by including USU as part of his Fiscal Year 1998 Defense Reform Initiative (DRI). Program Budget Decision (PBD) 711 issued on December 17, 1997, outlined the DRI and moved USU from under the direct oversight of the Office of Health Affairs, Office of the Secretary of Defense (OSD), to the collective oversight of the Surgeons General of the Army, Navy and Air Force. The PBD ensured manpower and funding for USU and established the Surgeon General of the Navy as the Executive Agent for program, budget, and funding execution responsibilities. The PBD also directed that the University's funding would continue to be programmed, budgeted, and executed within the Defense Health Program.

The Establishment of the USU Executive Committee. The administrative process for fiscal matters was defined during 1998 by the ASD/HA, in consultation with the USU BOR, the USU administration, and the Surgeons General. As a result, DoD Directive 5105.45, was updated on May 17, 1999, to include the formal establishment of the USU Executive Committee (composed of the three military Surgeons General) to provide management oversight for the University. The USU President now reports to the ASD/HA through the Executive Committee. The Executive Committee, under its current Chair, **LTG Ronald R. Blanck, Surgeon General of the Army**, conducts quarterly meetings that focus on important academic and administrative issues at the University. The USU Executive Committee and the USU Board of Regents have developed a close working relationship in a shared effort to enhance the academic and administrative programs at the University.

As the Executive Agent, the Navy Surgeon General's Office provides oversight for the University's budgeting and programming activities. The DoD Directive further clarifies that the USU

funding and personnel requirements will not be offset against the Navy Surgeon General's budget or work-year allocations; USU funding remains within the Defense Health Program. Section 7.2.1 of Directive 5105.45 also directs that USU civilian personnel authorizations will be under the purview of the DoD Executive Agent (Navy) and that USU civilian employees should be moved from OSD and carried on the rolls of the Department of the Navy. The USU civilian employees officially converted from OSD to Navy employees with the changing of the University's Subelement and Unit Identification Code at the end of Fiscal Year 1999. All official reporting documents will reflect this change (automatically for the USU government service/wage grade (GS/WG) employees; and, manually for the USU administratively determined (AD) employees pending the revision of computer software). It was agreed that the Human Resource Services Center (HRSC) of Washington Headquarters Services (WHS) will continue to service the University for its personnel requirements. An inclusive review of the USU personnel instructions for compliance with the Navy personnel instructions is currently underway.

A Strengthened Relationship Between USU and DoD. The evolving relationship between the USU and DoD from 1991 through 1999 has proven beneficial to the University. This new relationship has clarified and strengthened the position of the University within the entire DoD structure. The expansion of the oversight role of USU by the Executive Committee (the three military Surgeons General) has proven to be quite positive in terms of strategically identifying the ever-changing requirements of the MHS and evaluating how USU is currently meeting the needs of its primary customers, the Surgeons General.

USU BOARD OF REGENTS.

"The University continues its major contribution to total force health protection by educating and training physicians and nurses for 'careers in the Uniformed Services. Our superb physician graduates are also extremely capable military medical officers; they constitute 20 percent of active duty military physicians (2,497 of 12,447) and currently occupy a significant percent of the Services' medical leadership positions. This achievement convincingly demonstrates that we are meeting our legislative mandate to produce a career cadre of leaders in military medicine, An important illustration of this success is the 81 percent retention rate among those physicians whose initial service obligations have been completed."

USU Board of Regents Third Annual Report to the Secretary of Defense, dated October 1, 1999.

Membership of the Board of Regents. The USU Board of Regents (BOR) is an advisory committee governed by the Federal Advisory Committee Act, the General Services Administration Final Rule (41 C.F.R. Part 101-6), and Department of Defense Directive 5105.45. The nine members of the Board are distinguished academics, educators, health care providers and public servants; they are Presidential appointees confirmed by the United States Senate: Lonnie R. Bristow, M.D., Chair; Carol J. Johns, M.D., Vice Chair; Robert E. Anderson, M.D.; Shirley Ledbetter Jones, COL, Retired, U.S. Army National Guard; W. Douglas Skelton, M.D.; Everett Alvarez, Jr., J.D.; John E Connolly, M.D.; Ikram U. Khan, M.D.; and, John F. Potter, M.D.

Recently Appointed Members of the Board. **Ikram U. Khan, M.D.**, was confirmed by the United States Senate on May 26, 1999 and was appointed to the Board of Regents by President Clinton on June 7, 1999. Dr. Khan is a general surgeon; he is also the President of Quality Care Consultants, which provides quality and utilization management consulting services to hospitals, health care providers, and managed care organizations. Dr. Khan was appointed to the Nevada State Board of Medical Examiners in both 1985 and 1989; he has also served on the Health Care Cost Containment Committee of the Nevada State Legislature.

On September 10, 1999, President Clinton announced his intent to nominate **John F. Potter, M.D.**, as a member of the USU Board of Regents; he was confirmed by the United States Senate on October 29, 1999. Dr. Potter, of Potomac, Maryland, is a tenured Professor of Surgery at the Georgetown University School of Medicine. A surgical oncologist, he was the founder and Director of the Vincent T. Lombardi Cancer Center. He has also served as President and Chairman of the Board of the Association of American Cancer Institutes. Dr. Potter has served on active duty with the Navy and also in the U.S. Public Health Service.

Ex Officio Members of the Board. In addition to the nine White House appointees, the Board also has six ex officio members. These include 1) the Assistant Secretary of Defense for Health Affairs, Dr. Sue Bailey; 2) the U.S. Surgeon General of the Public Health Service, Admiral David Satcher; 3) the Surgeon General of the Army, LTG Ronald R. Blanck; 4) the Surgeon General of the Navy, Vice Admiral

Richard A. Nelson; 5) the Surgeon General of the Air Force, Lt. General Paul K. Carlton, Jr.; and, 6) the President of USU, James A. Zimble, M.D., who serves as a non-voting member.

There are eight advisors to the Board: 1) the Dean, School of Medicine; 2) the Dean, Graduate School of Nursing; 3 - 6) the Commanders of the Walter Reed Army Medical Center, the National Naval Medical Center, the Malcolm Grow Air Force Medical Center, and the Wilford Hall Air Force Medical Center; 7) the Director of the Defense Medical Readiness Training Institute in San Antonio, Texas; and, 8) former Assistant Commandant of the Marine Corps, General Thomas Morgan, United States Marine Corps (Retired) who continues to serve as the military advisor to the Board.

The Board's Significant Role in Academic Affairs. The BOR has continuously played a prominent role in academic affairs at the University, to include the final review of candidates for the USU President prior to the Secretary of Defense's selection of the University's Presidents:

Anthony R. Curreri, M.D., was appointed by **President Nixon** in 1974 and retired in 1976;

Mr. David Packard, Acting President, served from November 1976 until May 29, 1981;

Jay P. Sanford, M.D., served from May 1981 through 1990; and,

James A. Zimble, M.D., has served since July of 1991 to present.

The BOR has also reviewed the final selections for the Deans of the SOM and GSN prior to their selection by the USU President:

School of Medicine:

Jay P. Sanford, M.D., was appointed as the first Dean, SOM, in May 1975 and served through 1990;

Harry C. Holloway, M.D. served as the Deputy Dean from 1990 through June 1992;

Nancy E. Gary, M.D. was appointed as Dean on June 28, 1992, and served through mid-1995; and,

Val G. Hemming, M.D. was appointed as Interim Dean on July 2, 1995, and has served as Dean from May 3, 1996 to present.

Graduate School of Nursing:

Faye G. Abdellah, Ed.D., Sc.D., RN, served as Acting Dean following the establishment of the GSN in 1993; and was selected as Founding Dean, GSN, serving from May 17, 1996, to present.

Faculty appointments, promotions and organization, awarding of degrees, curriculum design and implementation, academic requirements for admission and graduation, and related matters vital to the

academic well-being of the University are all included in the definition of "academic affairs" provided by DoD 5105.45. The Directive clarifies that it is DoD policy that **"...consistent with the performance of the DoD mission and with established practices covering academic independence and integrity in the fields of medical and health sciences education, the Department of Defense recognizes the unique role of the USU Board of Regents in advising the Secretary of Defense. The Assistant Secretary of Defense for Health Affairs, the USU Executive Committee, and the President of the USU will be guided by the advice of the USU Board of Regents on academic affairs."**

The Board of Regents' Mission and Responsibilities. The Board's principal mission is to assure compliance with the University's accreditation authorities. The Regents approve academic titles, as appropriate, for military and civilian members of the faculty. Additionally, upon the recommendation of the University's faculty and Deans, the Regents approve the granting of appropriate academic degrees to successful candidates. The BOR recommends the establishment of postdoctoral, postgraduate and technological institutes, and programs in continuing medical education for military members of the health professions; and, the Regents also recommend reciprocal education and research programs with foreign military medical schools. Additionally, the BOR is significantly involved with the University's strategic planning process. On April 4, 1999, a currently revised Charter outlining the mission, membership, duties and responsibilities of the BOR was approved by Health Affairs.

The Board's Third Report to the Secretary of Defense. In their third annual report to the Secretary of Defense, the Regents listed five highlights from among the University's many accomplishments during 1999: 1) The University's Strategic Plan has become the core document around which USU is formulating its future (copy at Appendix B); 2) the University is developing outcome measures of success for its graduates. This project, exceptional among U.S. medical schools, is possible because USU is better able to gather on going data from the Services. **Lt. Gen. Roadman, recently retired Surgeon General of the Air Force**, continues to lead this project for the BOR. A final report is planned during February of 2000; the Graduate School of Nursing (GSN), in a similar manner, is also reaching out to the Services to ensure that the USUHS GSN graduates are meeting the unique requirements of the Federal Nursing Chiefs; 3) each of the 13 entities that assess various aspects of the University's performance has awarded USU full and unconditional accreditation; 4) In September 1999, the National Capital Area Military Medical Simulation Center began the training and skills assessment of military physicians, nurses, and medical students. This state-of-the-art teaching facility allows health professionals to augment their skills through patient simulations, virtual reality applications, and training with mannequin simulators. A major use of the Center will be the instruction of readiness skills and focused pre-deployment training for wartime, peacekeeping, and humanitarian missions; and, 5) in a joint project with the Department of Veterans Affairs, the Graduate School of Nursing (GSN) instituted a cost-effective strategy to employ distance learning at numerous sites across the United States for nurses to complete a certificate program as adult nurse practitioners. In addition, the GSN is directing a pilot distance learning project for military Certified Registered Nurse Anesthetists stationed abroad or aboard ship. (All of these accomplishments are described in detail in sections II, III, IV, V, and VI of this report.)

T. Burton Smith, M.D. - A Memorial. T. Burton Smith, M.D. was recognized for over eleven years of distinguished service as a member of the USU Board of Regents from December 1987 until his passing in May 1999. During Dr. Smith's productive association with the Board of Regents, he unfailingly offered valuable advice to both the Board and the University President. Throughout his eleven years of service, his warmth and humor were shared with everyone he encountered. Dr. Smith brought to the Board a lifetime of experiences in the practice of medicine, which included his service as a Naval medical officer where he saw combat in the Pacific Theater. During his career, he also provided significant support for the Saint John's Hospital Foundation in Los Angeles, California. His notable selection as the White House Physician to **President Ronald Reagan**, and subsequent leadership over the streamlining of medical procedures for the Executive Office of the President, ensured his effectiveness as a Board member. Dr. Smith was a consistent advocate of the University. For his contributions, the BOR awarded, posthumously, Dr. T. Burton Smith the University's Distinguished Service Medal. He will be missed.

STRATEGIC PLANNING

A Perpetual Work-In-Progress. A strategic plan must continuously evolve to reflect the changing environment. Beginning with the strategic planning process initiated in 1991, an increasingly systematic approach has been developed for setting the University's priorities and allocating resources. During 1998, the University clearly outlined the basic objectives under each of the goals of its strategic plan. USU activities must show a direct relationship with the overall strategic plan when submitting their requests for future budgets. Thus, a formal means for identifying program needs and for submitting increased budget requests has evolved. Involvement of USU administration, faculty and staff at both the formal and informal levels of the decision-making process assists in the allocation of resources throughout the University's wide range of activities.

Progress Toward Achieving the University's Strategic Goals. As the strategic planning process continued during 1999, the University began adding performance measures to the objectives. The following are examples of selected accomplishments made during 1999 toward achieving the objectives of the first of the University's six strategic goals. Sections II, III, IV, V, and VI of this report provide additional information on each of the listed accomplishments (the USU Strategic Plan is provided at Appendix B):

Goal 1: Preeminence in the Academics of Military and Operational Medicine

School of Medicine (SOM)

Academic Operations

The Simulation Center, a collaborative project with the Surgeons General located at Forest Glen, will begin its operations with the incoming first year medical student class by serving as the site for Introduction to Clinical Medicine I, a course that teaches medical interviewing skills.

An Emerging Infectious Diseases Initiative was approved by the USU Board of Regents; the military and broader medical and public health consequences of the changing pattern in infectious diseases will be addressed by this activity.

An inclusive self-study, prepared by the SOM Chairs and USU Activity Heads, and a site visit by the accrediting organization for the SOM, the Liaison Committee on Medical Education (LCME) were completed during 1999. Preliminary responses from the LCME indicate a strong recommendation for continued accreditation.

Graduate School of Nursing (GSN)

Distance Learning Initiatives

The GSN is directing a pilot distance learning project for military nurse anesthetists. The use of Internet-based video conferencing and other media in this program eliminates the need for transferring nurses to a new station in order to receive advanced training. The students are located throughout the world and on board military ships.

The GSN Adult Nurse Practitioner Program is an interactive teleconferencing program which uses Veteran Affairs (VA) and GSN assets to graduate advanced practice nurses, from multiple sites across the United States, without disrupting current service capabilities at VA medical centers. Since the first graduation in May of 1999, 21 graduates have successfully passed their certification examinations.

Continuing Education for Health Professionals (CHE)

Consulting and Continuing Medical Education

AMA Seminar: Medicine's Role in Responding to Biological and Chemical Terrorism, Is Your Community Ready? The American Medical Association (AMA) recognizes both USU's unique curriculum, which includes the preparation of medical students for the medical response to terrorism, and the University's placement within the Military Health System. During 1999, USU collaborated with the Military Medical Departments, the Public Health Service, the AMA Section Council on Federal and Military Medicine, the National Medical Veterans Society, and the AMA Council on Scientific Affairs to offer a seminar for the AMA delegates prior to their Annual Meeting in Chicago on June 19, 1999. The seminar addressed medicine's role in responding to biological and chemical terrorism. USU CHE sponsored this conference and awarded 100 physicians three hours of Category 1 Continuing Medical Education.

USU continued its affiliation with the U.S. Department of State (DoS) by designing the curriculum and providing two iterations of a continuing education program for the Medical Office of DoS. This collaborative effort was in response to the bombing of the American embassies in Africa. Along with two days of trauma and disaster updates, tracks on Medical Informatics and Advanced Trauma Life Support were available. Eighty-one individuals earned continuing education credits through the USU Office of CHE.

MISSION ACCOMPLISHMENT

USU Graduates Provide Continuity, Leadership, and Dedication to Public Service.

The School of Medicine. The importance of pre-war and wartime knowledge of medical requirements was one of the significant factors that motivated both the Congress and the Executive Office of the President, in 1972, to recommend and approve the establishment of USU and the Health Professions Scholarship Program (HPSP) as complementary sources of accession for military physicians. Public Law 92-426 established the HPSP to be a flexible source for the quantity of physicians required by the Armed Forces, USU was established to provide a cadre of military medical officers who would serve a career as active duty physicians and effectively ensure continuity and leadership for the MHS. With the graduation of its 20th class, 2,792 physicians have been granted Medical Degrees. Currently, the 2,497 USU physicians on active duty in the Uniformed Services represent over twenty percent, or one out of every five, of the total MHS force of some 12,447 physicians (the congressional founders envisioned USU representation at ten percent). The overall retention rate for USU graduates is 91 percent; the retention rate for those USU physician alumni who have completed their service obligation and could leave active duty is 81 percent (Congress had originally envisioned retention rates close to 70 percent).

The Graduate School of Nursing. Following the identification of a need for advanced practice nurses by the Federal Nursing Chiefs, in 1993, the Congress appropriated funding for the USU Graduate School of Nursing (GSN). The GSN's mission is to prepare advanced practice nurses in critical specialty areas as requested by the Federal Nursing Chiefs. Since 1996, full accreditation has been received by the GSN for both the Family Nurse Practitioner and the Certified Registered Nurse Anesthesia Programs. A total of 96 uniformed advanced practice nurses have received Masters of Science in Nursing Degrees from the USU GSN since its first class graduated in May of 1995. All of the 96 advanced practice nursing graduates have passed their certification examinations; 95 GSN graduates remain on active duty.

ACCREDITATION

The Middle States Association of Colleges and Schools Grants Accreditation. The University is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools (MSA/CHE). The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Commission on Recognition of Postsecondary Accreditation. Following its establishment in 1972, USU received "candidate for accreditation status" from the MSA/CHE in 1977, and has retained accreditation since 1984.

Prior to the site visit by the Middle States Association, a USU Periodic Report was submitted to the MSA/CHE during June of 1998. The Middle States Self-Study was prepared by the Associate Dean for Medical Education through extensive coordination with the Activity Heads of the University. In July of 1998, the MSA/CHE reported that the USU Periodic Report was ... "to be applauded for its serious and

candid review of the areas of concerns pointed out by the Middle States Evaluation Team in 1993." The MSA correspondence further emphasized that **"it is clear that USUHS is responding to its internal and external environments and preparing aggressively for the future ...** The move toward distance education is taking hold in education today ... the Graduate School of Nursing is using this strategy to reach out to nurses ... The Dean (SOM) has already begun to integrate duplicate programs, develop new ambulatory care sites and revise the medical curriculum ..."

On December 1, 1998, the USUHS President was notified by the Middle States Association that the University had been granted full accreditation, with no follow-up required. The next evaluation visit by the MSA/CHE is scheduled for 2002-2003.

Thirteen Accrediting Entities Ensure that Educational Standards Are Met by the University. In addition to the MSA/CHE accreditation, the following twelve professional organizations continue to authorize accreditation for the University's schools and programs:

SOM: 1) the Liaison Committee on Medical Education (LCME); 2) the Accreditation Council for Graduate Medical Education (ACGME); 3) the American Psychology Association's Committee on Accreditation; 4) the Council on Education for Public Health;

GSN: (5) the National League for Nursing (NLN); 6) the Council on Accreditation of Nurse Anesthesia Programs (COA); 7) the American Association of Colleges of Nursing Commission on Collegiate Nursing Education (AACN/CCNE);

University: 8) the Nuclear Regulatory Commission (NRC); 9) the American Association for the Accreditation of Laboratory Animal Care (AAALAC); 10) the Accreditation Council for Continuing Medical Education (ACCME); 11) the American Nurses Credentialing Center's Commission on Accreditation; and, 12) the American College of Healthcare Executives (ACHE). Individual discussions on the accreditation for the School of Medicine, the Graduate School of Nursing, the Graduate Education Programs, the Graduate Medical Education Program, and the Office of Continuing Education for Health Professionals are provided at sections II, III, IV, V, and VI of this report.

OSD RECOGNITION OF USU's MULTIPLE PRODUCTS AND THE GENERATION OF COST-AVOIDANCE

OSD-Conducted Surveys Recognize USU's Academic Certification and Faculty Credentials. In mid-1997, Management Reform Memorandum 3, Office of the Secretary of Defense (OSD), called for a study of the educational and professional development programs sponsored by OSD. That study and the efforts of the Defense Reform Task Force led to the Defense Reform Initiative's decision to establish an Office of the Chancellor for Education and Professional Development. Throughout 1997 and 1998, USU participated in intensive surveys on streamlining education throughout DoD. The University provided inclusive responses to the Office of the Deputy Assistant Secretary for Civilian Personnel Policy; these responses included all of the services/products resourced by USU as part of its operating cost. **These OSD-conducted surveys mark the first official OSD recognition of the multiple products of USU in addition to its medical school graduates.** As a result of those surveys, and based on the average course length of the continuing education efforts of the University, OSD analysts identified approximately 188 student man years in addition to the 865 (SOM - 660; GSN - 90; Graduate Education - 115) students who are traditionally credited to the University.

During 1998, in response to DoD's Defense Reform Initiative Directive 41, a two-part survey on faculty credentials was conducted for use in the development of a blueprint for the Office of the Chancellor. **The Office of the Deputy Assistant Secretary for Civilian Personnel Policy concluded, as in August of 1997, that USU has the strongest academic certification and faculty credentials among all activities surveyed.**

Appointment of the First Chancellor for Education and Professional Development. Jerome F. Smith, Jr., Ph.D., was named as the first Chancellor for Education and Professional Development by the Secretary of Defense; he was sworn in by the Deputy Secretary of Defense on October 2, 1998. In this position, he serves as the principal advocate for the quality and cost effectiveness of education for civilian personnel in the Department of Defense. Dr. Smith completed 34 years of commissioned service before retiring as a flag officer from active duty in August of 1995. Prior to his current appointment, he was the civilian Dean of the Information Resources Management College, National Defense University.

The following University-wide faculty totals were provided on September 17, 1999 to the Office of the Chancellor of Education and Professional Development:

Full Time Faculty Assigned to USU - 305

186 civilians and 119 uniformed officers

Adjunct Faculty - 3,530

1,120 civilians and 2,410 uniformed officers.

Multiple Products and Services Generate Cost-Avoidance for the Military Health System.

In meeting the mandates of its establishing legislation and the standards for accreditation as an academic institution, USU provides the following services to the Military Health System (MHS): 1) uniquely trained physicians in the practice of military medicine who provide continuity and leadership for the uniformed medicine community; 2) advanced practice nurses as required by the Federal Nursing Chiefs; 3) graduate education in the biomedical sciences; 4) support as the Administrative Office for the National Capital Consortium residency training programs; 5) continuing education and training for health care and related professions **(estimated cost-avoidance in Fiscal Year 1999 for the MHS was \$12.9 million)**; 6) special military/public health education programs; 7) applied and basic research; 8) consultative and archival services to DoD on health care and health care delivery in times of combat and contingency and humanitarian operations; and 9) health care for military beneficiaries provided by the USU clinical faculty in the course of teaching **(over 130,000 hours of service during Fiscal Year 1999 at an estimated manpower cost of \$7.3 million)**. All of these products/services are resourced as part of the operating cost of the University and are discussed in the following sections of this report.

ACADEMIC CENTER FOR THE MILITARY HEALTH SYSTEM

"I note with great interest all the events that have been taking place both within the USA and also outside of the USA with respect to the Uniformed Services University of the Health Sciences. There is absolutely no doubt that establishments such as those of the above University remain vital for all Modern Western Armed Services. I have no doubt that the United States Armed Forces will continue to rely implicitly upon this University and also that its influence will continue to be wide spread."

Letter from Australian Deputy Director, General Defence Health Services - Army, **Colonel P.D. Byrne, AM, RFD, ED**, dated February 5, 1999, to **Norman Rich, MD, Chair and Professor, USU Department of Surgery.**

Active-Duty, Off-Campus USU Faculty Total 2,410. Multiple USU academic and research activities contribute to the medical knowledge and technology base available to the MHS. 2,410 active-duty, off-campus USU faculty members throughout the MHS collaborate in academic and research efforts with the University. Through these collaborative efforts, USU serves as the Academic Center for those military medical officers and health care providers who seek to advance their military careers and their knowledge of uniformed health care. For their valuable service to the University, these active duty, off-campus faculty members are awarded appropriate academic rank.

Thirteenth Conference on Military Medicine - Unexplained Symptoms After War & Terrorism: Building Toward Consensus, May 24-26, 1999, USU Campus. The University continued to serve as the Academic Center for Military Medicine through the planning and presentation of the Thirteenth Conference on Military Medicine which was held on the USU campus from May 24-26, 1999. A current and significant area of concern for the MHS was addressed through the coordination process for the 1999 Conference on Military Medicine: persistent unexplained physical symptoms following deployment or response to terrorism. The process described below evidences a measurable effort to select independent experts, to avoid even the perception of a conflict of interest in the outcomes, and to adhere to established criteria for the review process.

A Consensus Development Process. To coordinate the Conference, a consensus development process was followed to establish an understanding of three important questions pertaining to persistent unexplained physical symptoms after war or terrorism:

1. What is the strength of the epidemiological and scientific evidence that war and terrorism

or similar catastrophic events cause chronic, unexplained physical symptom syndromes and/or accompanying physiological changes among those exposed?

2. What epidemiological and scientific evidence is necessary to conclude that an exposed population suffering from chronic unexplained physical symptoms has a new and unique illness rather than some previously defined symptom-based disorder (e.g., fibromyalgia, chronic fatigue syndrome)?

3. What is the strength of the evidence that chronic unexplained symptom syndromes after war or terrorism can be prevented or mitigated by using population and/or health care-based strategies, especially strategies involving communication and education?

The Planning Committee. In establishing the Planning Committee, **emphasis was placed on the selection of independent experts.** Since the prevention and management of health issues surrounding war and terrorism are the responsibility of a number of governmental agencies, the Planning Committee was developed as a multi-agency, multi-advocacy, multi-disciplinary, and multi-national group. The Planning Committee determined the theme of the conference and identified its general scope; the committee also nominated and recruited experts to serve on the Consensus Committee.

Other governmental, non-governmental, and international organizations represented on the planning committee were: 1) the Department of Veterans Affairs; 2) the Navy Medical Research Center; 3) Health and Human Services; 4) the Office of the Special Assistant for Gulf War Illnesses, Department of Defense; 5-7) three offices representing the Assistant Secretary of Defense for Health Affairs: Force Health Protection; Military Public Health; and, the TriCare Management Activity; 8) the Gulf War Health Center, Walter Reed Army Medical Center; 9) the American Legion; and, 10) the British Liaison Officer for Gulf Health.

The Consensus Committee. To ensure maximum credibility of the Consensus Committee and its Consensus Statement, **a conscious attempt was made to exclude from consideration any direct government representatives or anyone with apparent conflicts of interest.** The Consensus Committee is responsible for formulating and writing evidence-based responses to the three questions posed by the Planning Committee. The Gulf War Health Center and the USU Office of Continuing Education for Health Professionals were tasked to provide editorial assistance. The Consensus Committee was charged to develop a Consensus Statement using published and unpublished data and information reviewed within the Committee's membership and during the proceedings of two closed and one public meeting. Evidence considered could range widely as the Committee deemed appropriate, including but not limited to experimental, observational, quasi-experimental, or qualitative research. In searching for events analogous in their health implications to war and terrorism, the Committee considered a wide range of exposures ranging from paradigms used in animal experiments to past wars, terrorist attacks, or, natural or technological disasters. A draft of the Consensus Statement was due to the Planning Committee by December 1, 1999. The final responsibility of the Consensus Committee is to prepare its responses to the three questions on or before March 1, 2000.

Eight uniquely recognized individuals were successfully recruited to participate as the Consensus Committee: **Robert Aronowitz, M.D., Robert Wood Johnson Medical School, Camden, New Jersey; Professor Simon Wessely, King s College of Medicine, London, England; Daniel J. Clauw, M.D., Georgetown University Medical School, Washington, D.C.; Howard Kipen, M.D., Robert Wood Johnson Medical School, Camden, New Jersey; Edgar Jones, Ph.D., King s College of Medicine, London, England; Scott Ratzan, M.D., MPA, Academy for Educational Development, Washington, D.C.; Michael Sharpe, M.D., University of Edinburgh, Edinburgh, Scotland; and, Kurt Kroenke, M.D., University of Indiana School of Medicine, Indianapolis, Indiana.**

The First Closed Meeting. During the Spring of 1999, the Planning Committee and the Consensus Committee met for one day to introduce the Consensus Committee to its task, to provide opportunity for members of the two committees to discuss and clarify that task, and to complete the planning for the Public Meeting.

The Public Meeting: Thirteenth Conference on Military Medicine. The purpose of the public meeting was to have experts present relevant topics to the Consensus Committee combined with moderated roundtable discussions. The meeting was held on May 24-26, 1999, at the USUHS campus, and was open to the public for the purpose of awarding continuing medical education and continuing education credits. **For Physicians: USU designated this continuing education medical activity for 17 credit hours in Category I of the Physician's Recognition Award of the American Medical Association; For Nurses: USU designated this activity for 20.1 contact hours.**

Roundtable discussions were held to allow structured audience participation and questioning. There were eight moderated panel topics: 1) Framing the Challenge: Extreme Events, Symptoms, and Prevention; 2) Do Extreme Events Cause Persistent Unexplained Physical Symptoms? ; 3) Would We Know a New Symptom-Based Disorder If We Saw One?; 4) Investigating Symptoms After Extreme Events: The Role of Epidemiology; 5) Investigating Symptoms After Extreme Events: The Role of Social Science; 6) Investigating Symptoms After Extreme Events: The Role of Basic Science; 7) Population-Based Health Communication as a Health Promotion Strategy; and, 8) Compassionate Prevention & Care for Populations at Risk.

The ultimate goal of the Conference was to increase the Consensus Committee's exposure to information and data that could strengthen their responses to the three questions. The Annotated Bibliography used at the Conference was divided into seven sections with an inclusive total of 170 published and unpublished articles, data, and related information.

The Second Closed Meeting. The Consensus and Planning Committees were scheduled to meet during January 2000 to review the draft Consensus Statement. The Planning Committee was to provide both written and verbal comments on the draft statement. The Consensus Committee would then make a final review to determine if it would revise its statement following discussions with the Planning Committee.

The Final Product. The final Consensus Statement should be between 5-6,000 words in length. The response to each question must include parsimonious, prioritized recommendations regarding future research based upon an estimate of the most promising and cost-effective directions from a societal perspective. The target date for completion of the Consensus Statement is March 1, 2000. **A risk communication specialist will assist the members of the Consensus Committee in the crafting of an 800-1,000 word executive summary for military personnel, veterans, their families, and the general public.** The completed Consensus Statement will be forwarded to the Military Veterans Health Coordinating Board and the members of the Executive Advisory Committee.

ORGANIZATIONAL CULTURE

"This goal deals with organizational culture, which has a responsibility for sensitivity to all social patterns of work, interaction and thought typical for our community in contemporary time. This leads to thinking of processes like opportunity, personal growth, atmosphere, image, engagement, bonding, sense of worthfulness, and the final common pathway of this goal - interdependency. No matter what is assigned to this goal, it must pass through the kind of window just described. If it does not have meaning for the community of the whole, then it is not organizational culture."

Philosophy of Goal 5, USU Strategic Plan

Continuous Efforts to Ensure a Diverse Community. A common challenge for most educational institutions is the goal to recruit and retain qualified underrepresented minority students and faculty who reflect America's diversity. The addition of a sixth goal to the USU Strategic Plan, University Recruiting and Minority Affairs, substantiates the University's commitment to a diverse community. In addition, notable efforts continued throughout the University's Equal Opportunity Programs during 1999. The Offices of University Recruitment and Minority Affairs, Student Affairs, Civilian Equal Employment Opportunity (EEO), Military Equal Opportunity (EO), the Brigade Commander, and Civilian Human Resources collaborated to ensure that the University continues to promote appreciation and understanding of diverse values and concerns. The focus was one that encouraged cooperation, respect, and collegiality among all members of the USU community through 1) the communication of equal opportunity principles; 2) the timely sharing of information; and, 3) the offering of training in personal development, retention, and supervisory skills.

Understanding Mutual and Diverse Values. The Offices of Equal Employment Opportunity (EEO/civilian), Equal Opportunity (EO/uniformed), University Recruitment and Minority Affairs, Student Affairs, the Brigade Command, and Civilian Human Resources presented programs and initiatives during 1999 to promote a clear understanding and appreciation for the diversity that exists throughout the University community. In January of 1999, over 200 members of the University community attended a performance that dramatized an imaginary meeting between Dr. Martin Luther King, Jr. and Malcolm X.

The December 1998 Holiday gathering celebrated the accomplishments, traditions, and heritage of the many cultures that embody the University family. The music, food, costumes, displays, and entertainment of this year's festival represented the diverse manner in which the holiday season is observed around the world and throughout the University community.

The Women in Medicine and Science Group, sponsored by the Office of University Recruitment and Minority Affairs (MAO), met monthly to discuss various issues affecting women in medicine. The Student National Medical Association (SNMA), also sponsored by the Office of MAO, remained active throughout the University and the local community. The SNMA sponsored medical Spanish classes, a Youth Science Enrichment Program, and noon time presentations at local elementary schools on Cultural Competence. SNMA members also volunteered at a local clinic for the underserved.

Timely Sharing of Information. During 1999, the Center for Informatics in Medicine continued to provide computer orientation courses for faculty and students. The Educational Technology with Computers Special Interest Group, monitored by the Office of the Vice President for Teaching and Research Support, provided electronic programs to enhance existing educational programs and new educational services. Web pages were created and updated to facilitate access to information, including instructions, procedures, and evaluation processes. Regularly scheduled meetings between faculty representatives, staff, and executive management included electronic distribution of meeting summaries.

Fostering a Team-Based Environment. Throughout 1999, the USU community worked to build and strengthen cooperation, integrity, trust, and collegiality as well as to reward members for their contributions. A performance evaluation process developed by the Civilian Human Resources Division and the Brigade Command ensured that each employee received a rating and appropriate recognition for his/her accomplishments. The Offices of EEO and EO continued their Familyhood Sessions and provided community-wide meetings. Presentations of accomplishments by individuals, teams, and departments were given. For example, the University faculty supporting the Advanced Technology Training Telepresence Surgery System, the Anesthesia Patient Simulator, and Military and Emergency Telemedicine Training gave demonstrations for the general University community as well as for the media and external contacts of the University.

Development and Retention. During 1999, the Offices of Civilian Human Resources, Medical Education, Faculty Affairs, Research, the Brigade Command, University Recruitment and Minority Affairs, EEO (civilian), and EO provided programs and support to assist the University community in its self-development and training requirements. Civilian Human Resources (CHR) continued to expand the USU Mentor Program; participants and their mentors received training on a variety of skills. CHR also sponsored the establishment of a University Toastmasters International Club. Developmental courses such as Training in Speed Reading; Proof Reading; Basic Supervision, and Management were provided for over 200 members of the USU community by CHR. The Associate Dean for Faculty Affairs played a significant role in the Faculty Development Program by providing a revised policy on faculty teaching and mechanisms to evaluate teaching activities and outcomes. The University, through an extensive coordinating effort, also adopted a complete revision of its policy instruction dealing with faculty appointments, promotion, and tenure. This new document provides a broadened view of scholarship which allows appropriate recognition of the various dimensions of the USU faculty. Of particular importance is the ability to reward the scholarly contributions of the uniformed faculty for activities that are performed within their unique and public health environments.

Fourteen Seminars Are Presented to 206 Faculty Members. The Faculty Development Initiative developed by the Department of Family Medicine was recommended to the University Steering Committee as the model for the University's Faculty Development Program. Fourteen seminars were presented during 1999 with an attendance of 206 faculty and staff from the University and affiliated teaching and research sites. Of those 206 individuals, 161 received continuing education credits. Department and University funding was used to send faculty members to local and international conferences and seminars to obtain

additional research and educational skills. Furthering efforts to enhance skills in research and grant submission, the Vice President for Research, through the Research Development Program, increased faculty participation in its mentoring program to over 50 percent.

OSD Confirmation of USU Title 10 Authority. During Fiscal Years 1997 and 1998, there had been a one year suspension on the inclusion of allowances in the calculation of retirement benefits for the USU Administratively Determined (AD) employees (faculty and staff) who are covered under TIAA-CREF, Fidelity, or any other retirement system not established under Title 5 U.S.C. This issue, which involved USU's Title 10 authority, was resolved with OSD through the coordinated efforts of the OSD Office of the Deputy Assistant Secretary for Civilian Personnel Policy, Washington Headquarters Services, the USU President, and the USU Vice President for Administration and Management. As a result, the inclusion of allowances in the calculations of benefits for USU AD employees was reinstated by OSD for Fiscal Year 1999.

Legislative Language Removes the Limits of Executive Level IV for the Annual Rate of Basic Pay. Previously, the annual rate of basic pay for USU AD employees was limited to be no more than the rate set for Executive Level IV. In many cases, this limitation resulted in the need for allowances to bring the total pay up to the limits established by OSD in the USU salary schedules. During the last quarter of Fiscal Year 1998, the OSD Office of the General Counsel, at the request of the Deputy Assistant Secretary for Civilian Personnel Policy, recommended the legislative change contained in Section 1108 of the Conference Report for the National Defense Authorization Act for Fiscal Year 2000. As a result, when the Authorization Bill for Fiscal Year 2000 was signed by President Clinton, it effectively removed the limitations of Level IV for the USU AD employees.

USU Administratively Determined Salary Schedules Are Approved. The Principal Deputy Assistant Secretary of Defense (Force Management Policy) approved salary schedules for the USUHS AD employees on August 25, 1999. An increase in base pay was automatically provided for any AD employees whose base pay was lower than the minimum limits of the new salary scales. Salary schedules have been approved during both 1998 and 1999; previously, the salary schedules had remained the same from 1993 through 1997. A Memorandum of Understanding signed by the OSD Office of Civilian Personnel Management Services (CPMS), Washington Headquarters Services (OSD), and, the USU President has resulted in the implementation of comparability reviews by OSD as a critical component of the annual approval process for the USU AD salary schedules.

University Recruitment and Minority Affairs.

"Implement a comprehensive plan for the recruitment, retention, and advancement of qualified citizens to become USU students, faculty, and staff, with diversity comparable to the ethnic and gender-based diversity that comprises this great nation."

Mission Statement for the Office of University Recruitment and Minority Affairs, developed during 1999.

Office of University Recruitment and Minority Affairs. The USU Office of Minority Affairs (MAO) was established in 1991 with a mission to increase the participation and advancement of traditionally underrepresented minority and women students, faculty, and staff at the University. The Office of Minority Affairs established numerous programs to especially increase the recruitment and retention of underrepresented minorities at the University. Examples of such activities, to include newly established programs, are included in the following: 1) monthly recruitment trips to career fairs at undergraduate institutions and to national and regional meetings while emphasizing liaison with the Military Academies; 2) the continuous expansion of the mentorship program which serves all USU students (medical, nursing, and graduate education); 3) on-going liaison with the USU Offices of EEO and EO (civilian and military) to formalize coordinated efforts for promoting and maintaining a diverse, interdependent USU community; 4) sponsorship of: the National Native American Youth and the National Hispanic Youth Initiatives; the Advanced Summer Enrichment Programs; Medical Academic Advancement Programs; Biomedical Career Summer Enrichment Programs; and, Minority Medical Education Programs; 4) a Post-Baccalaureate Pilot Test Program; and, 5) community involvement and student support programs.

Following extensive briefings and communication with the USU President and Board of Regents, a sixth goal was added to the University's Strategic Plan during 1999: University Recruitment and Minority Affairs. In coordination with the new strategic goal, during 1999, the Office of Minority Affairs was renamed the Office of University Recruitment and Minority Affairs (MAO), resulting from strategy sessions to enhance the recruitment efforts of the University.

Recruitment Strategies. Through newly designed indirect strategies, the Office of University Recruitment and Minority Affairs, serving as the centralized office for USU recruitment, will mail packets of recruiting materials to all: Reserve Officer Training Corps (ROTC) Squadrons; military bases (installations and hospital commanders, chief enlisted advisors and education offices); pre-medical advisors at the military service academies; and, other venues of advertisement such as recruitment fairs at the University of North Carolina at Chapel Hill, Howard University, the University of Virginia, the Robert Wood Johnson University of Medicine and Dentistry in Piscataway, New Jersey, and Case Western Reserve University in Cleveland, Ohio. The recruitment packets will contain: a newly produced brochure and poster for recruitment; a video marketing the University; an interactive CD-ROM which gives details regarding all aspects of USU academic and student life; copies of the USU catalogs; and, current newsletters for hand-out to interested students. The USU recruitment display poster will include post cards that can be mailed back to USU to request additional information.

Upon request, members of the USU community (e.g., alumni, faculty, staff, the Board of Regents, external contacts, etc.) will be provided with a power point briefing, video or CD-ROM, and/or USU brochures, for presentations at their home-town educational institutions, organizational meetings, or, while on travel to various geographical areas. A current initiative being launched includes the USU alumni serving as USU liaisons at universities, colleges, or military installations near their current duty locations.

USU Development Program. The Vice President for Executive Affairs presented the newly established USU Development Program to the USU Board of Regents during the BOR meeting in August of 1999. Consultants at the Mayo Clinic and Harvard University are mentoring the new program; they have demonstrated how their own programs have been successful in marketing their products. The Development Program was established to be compliant with federal law, which prohibits USU from soliciting funding. The program is being developed in cooperation with the Henry M. Jackson Foundation where nonfederal funding has been identified to be used in hiring the initial staff for the program. A marketing video and CD-ROM were completed during 1999. Already, following coordination, the Packard Foundation has notified the University that it has approved \$1 million for a Packard Chair in the Department of Surgery. The USU Development Program has set a goal which includes 12 academic chairs at the University.

Post-Baccalaureate Pilot Test Program. The University began a pilot Post-Baccalaureate Program on August 9, 1999 for the Academic Year 1999-2000. This program is modeled after current civilian post-baccalaureate programs while maintaining compliance with federal laws and restrictions. The goal of the pilot program is to increase representation at USU of economically or educationally disadvantaged students. In the Fall of 1999, three such students entered the program: two males, Mexican-American and American Indian; and, one Hawaiian female. This pilot program will run for two concurrent years. Outcome evaluations will be conducted following the conclusion of the program. If this experimental program should be proven to be an effective route of entry for under-represented minority students into the University, the federal registry will be modified as appropriate.

USU Secures Funding for Biomedical Research by Minority Students. With backing from USU, during 1999, the University of Maryland Eastern Shore (UMES) received initial funding of more than \$240,000 from the Department of Health and Human Services in an effort to increase participation by minority students in biomedical research. USU will jointly submit grant applications with UMES in response to requests for proposals from local, state, and federal agencies, including private foundations. Specifically, USU and UMES will undertake initiatives to increase the number of UMES undergraduate honor students enrolled in programs that lead to a doctorate in the biomedical sciences; strengthen the faculty, curriculum and research training programs in the biomedical sciences at UMES; aid in the development of a research training infrastructure at UMES; foster the exchange of visiting faculties to conduct graduate seminars at each institution; and, increase the number of minority students enrolled in graduate programs at USU. The project period spans five years at a funding level of more than \$950,000.

Community Involvement and Student Support Programs. The USU Student National Medical Association (SNMA) Chapter members sponsored meetings and activities throughout 1999. The USU medical students continued weekly and/or monthly trips to public schools to discuss medicine and the medical profession with the young students. The objective of these visits is to strengthen the educational

pipeline between elementary and advanced education, and to especially encourage careers in medicine. The USU students familiarized the elementary students with such areas as the human skeleton and first aid care, to include bandaging and braces. Additionally, the Youth in Science and Engineering Program (YSEP) Committee under the leadership of SNMA is coordinating community support for the Washington, D.C. public schools through visits and seminar presentations.

The SNMA also sponsored a medical mission to Jamaica during June of 1999 for a third-year medical student, Second Lieutenant Anthony Montegut, MS-III, USAF. Lieutenant Montegut joined thirty medical students from other college and university SNMA chapters. The students were accompanied by two ophthalmologists, two family practitioners, and a podiatrist all of whom volunteered their services. The International Health Committee of the SNMA collaborated with the Organization of International Development to ensure appropriate international regulations were followed. During the seven day trip, two days were spent attending workshops held at the University of the West Indies. The remaining four days involved travel into the hills of Kingston and Ocho Rios to host free clinics and to make home visits. Lieutenant Montegut shared his experiences with the University during the Fall of 1999.

The Helping Hands Project.

"Once a week, USU medical students and USU physicians find time to provide family health care to low-income families in the Washington metropolitan area who would not otherwise have access to medical treatment."

MAO update on community support activities,
October 1999.

Each week, first and second-year medical students, USU physicians, and GSN nurse practitioner students find the time to provide medical care to low-income families in the Washington metropolitan area who do not have access to treatment. The students volunteer with the Helping Hands Project which includes three clinics located in Maryland and run by the Mobile Medical Care, Inc. The clinics are located at the KenGar First Baptist Church in Kensington; the Shepherds Table at the First Baptist Church of Silver Spring; and, the Adventist Community Center in Takoma Park. The three clinics provide services such as physical examinations, laboratory analysis, management of acute and chronic diseases, mental health problems, general health education, and referrals for X-ray examinations, specialty care and secondary care.

The mission of the project is to ensure that people receive stable family health care when they would otherwise be unable to afford it. No one is turned away. The USU students become acquainted with available community resources and they learn about the health care needs of patients. USU students take patient histories and present them to physicians; they give examinations and generally observe the attending doctors. The patients are treated for chronic problems such as hypertension, depression, arthritis, and diabetes; the students also see acute-care patients. Depending on the clinic, students see from six to fifteen patients during their three-hour shifts. Student volunteers are exposed to the overall population, people from different backgrounds who have varying requirements, with limited ability to pay for services. Helping Hands developed into the current program largely due to the vision of a student organizer, who is currently a Captain in the Air Force and a 1996 USU SOM graduate, and another volunteer at the Takoma Park Clinic.

The Office of the Brigade Commander. The USU Brigade Commander is recognized as the "senior active duty officer" of the University and reports directly to the President of USU. It is the responsibility of the Brigade Commander to ensure that the uniformed personnel assigned to the University adhere to the appropriate service specific standards set by their parent services. In addition, the Brigade Commander assures that the interests of the military members assigned to the University are addressed and that they remain competitive for promotion with their service peers. Under the leadership of the Brigade Commander, the uniformed students, faculty, and staff assigned and reporting to the School of Medicine (SOM), the Graduate School of Nursing (GSN), the Graduate Education Program, or other USU activities, programs or divisions must participate in all activities and events as they would in any other command of the Uniformed Services. Regular formations are held; physical fitness exercises, standards, and testing are adhered to; performance evaluations are completed and rated; and, uniformed personnel are trained in the appropriate uniformed programs and customs.

A Multi-Service Environment. The USU Brigade provides a clear chain of command for all uniformed members, thus allowing individuals to rapidly assimilate into their new units and the multi-service environment of USU. The Brigade structure includes a Commandant for both the SOM and the GSN. The SOM also has three company commanders representing the Army, Navy, and the Air Force; they are specifically assigned to USU to provide for military training in officership and leadership. A United States Public Health Service officer is also responsible for providing this special training to the Public Health Service students. The company commanders are mentors for the students and they deploy with them during each of the University's field training exercises. The USU uniformed faculty and staff also conduct service-unique and combined inspections and military formations. Similar to the military academies, each student class also has its own military command leadership structure. The students rotate positions among the class members, which increases individual exposure in the management of specific assignments, duties, and "command" roles.

Assurance of Operational Skills.

The training and qualifications USU students complete during the summer contributes to the achievement of Goal #1 in the USU Strategic Plan, "to be recognized in the government and private sectors as the preeminent national leader in military and operational medicine."

The Brigade's Operations Department provides the planning, coordination, and logistical support for the major military field training exercises for the first and fourth year medical students. The development of plans continued during 1999 to include the GSN students in the major exercises: January 1999 - **Operation Bushmaster 1-99** at Camp Bullis, Texas; June - July 1999 - **Operation Kirkeshner** at Quantico, Virginia, and, September 1999 - **Operation Bushmaster II-99** at Camp Bullis, Texas. Through training such as Operations Kirkeshner and Bushmaster, USU encourages each uniformed student to develop and maintain the special skills required to earn a leadership position in military medicine (these events are further described in Part II, Student Affairs).

During the summer of 1999, the USU Brigade Commander reported that the second year medical students had participated in the following activities: **Army** - U.S. Army Airborne School; Mountain

Warfare School; the Army Surgeon General's Office; Operational Emergency Medical Skills; Expert Field Medical Badge; and, USA Operational Units; **Navy** - Diving School; Aerospace Medicine (USS Roosevelt); USN SEALs; Top Gun; Mountain Warfare Training; Amphibious Warfare School; Neuroanatomy Computing; USNS Mercy Hospital Ship; and, the USN Special Warfare Detachment; **Air Force** - Operational Emergency Medical Skills; Top Knife; Expert Field Medical Badge; Mountain Warfare School; and, USAF Hospitals and Research. From qualifying for the Expert Field Medical Badge to conducting undersea medical research with the U.S. Navy SEALs, USU students are developing and maintaining the special skills required to assume leadership positions in uniformed medicine. Additionally, the diverse and exciting training USU students complete during summer training helps the University to accomplish Strategy 5.2 of the USU Strategic Plan: "to establish development programs that will make study, employment, and collaboration at USU attractive and rewarding."

The Brigade Headquarters Company is the enlisted support element for USU. In addition to the performance of their military occupation specialties during normal duty hours, the enlisted members of the Headquarters Company ensure that equipment, supplies, transportation, and personnel are positioned to accomplish the major field exercises. The Brigade maintains responsibility to ensure that the enlisted personnel at USU are proficient in their operational support skills.

Orientation Responsibilities. Another responsibility of the Brigade during the first quarter of each Academic Year includes the in-processing requirements for all uniformed students, whether they are matriculating into the SOM, GSN, or the Graduate Education Programs in the SOM. In the case of the 165 first year medical students for Academic Year 1999, Brigade letters were issued to the incoming students to include a detailed calendar of events outlining their in-processing week. This increased level of detail facilitates the orientation process and eliminates concerns over appropriate uniform, classroom, and Brigade requirements. The military aspects of the USU were stressed during the first week, as well as the students' responsibilities in their primary role as military officers.

Minority Recruitment Efforts. The Brigade continued to reach out to the ROTC and underrepresented communities during 1999. And, the Brigade Commander's membership on the Medical Advisory Selection Committee at West Point continues to give USU exposure to some of the top military academy students in the country. The Brigade's recruiting efforts at the University of Arkansas also contributed to USU's 1999 recruitment efforts targeted on underrepresented communities.

USU Color Guard. Formal ceremonies have continued to be an important element of military tradition since the earliest armies and navies entered combat. Whether at a retirement, change of command, or unit stand-up, the military goes to great lengths to showcase its commands, its people, and its pride in the Nation. Color guards have long been an important part of these ceremonies, and USU is carrying on that tradition, forming its own color guard in 1997. The USU Color Guard is comprised of enlisted members (E-5 and below) from the Army, Navy, and the Air Force. The first major performance of the USU Color Guard occurred at the 1997 USU Graduation; the colors were also presented during the USU Brigade Change of Commander Ceremony in 1998. During the May graduations in both 1998 and 1999, the USU Color Guard brought the colors on stage during the commencement ceremonies which were held at the National Society of Daughters of the American Revolution Constitution Hall in Washington, D.C. Also, during 1999, the Color Guard performed at the annual USU Dining-Out; their

performance preceded the Key Note Speaker of the formal event, **Henry J. Heimlich, M.D.**, of the Heimlich Institute in Cincinnati, Ohio. Dr. Heimlich's lecture focused on his experiences during World War II.

USU Continues to Receive Top Awards for the Combined Federal Campaign. Early in 1999, the University was informed that it had earned six major awards for its efforts during the 1998 Combined Federal Campaign (CFC). The **President's Award**, the most prestigious CFC award, was presented to USU to recognize an average contribution of at least \$150 per person and a participation rate of at least 75 percent. CFC officials reported that USU contributions for 1998 totalled \$162,432, with an average contribution of \$181.57 per person, and a participation rate of 81.9 percent (USU also received this award following the 1997 CFC campaign). The **Pacesetter Award**, which recognizes at least a 2.2 percent increase in contributions over the previous year's total, was presented to USU for both the 1997 and 1998 campaigns. The **Best Goal Poster Award** was also presented to the University President for the third consecutive year. **Ms. Stacey Sachs from the USU Audiovisual Center** designed the poster that took first place in the National Capital Region's Communication Contest. And, for the third consecutive year, the USU Quarterly was awarded first place for the **Best Special CFC Edition for 1998**. The editors of the USU Quarterly are **Tsgt Gary Carpenter, USAF, and Tsgt Steve Doyle, USAF**. Finally, USU received **two Best Feature Story Awards**: Best Feature Story (featuring a charitable organization that benefits from CFC) for the article, "Hunger in America," written by **Ms. Jane Bradley, Executive Assistant, Teaching and Research Support**; and Best Feature Story (featuring an employee) for the article, "My Most Rewarding Experience," written by **Mr. Bobby Anderson, Director, Review and Evaluation**.

At the close of the 1999 CFC Campaign, the USU President announced that the University had reached its goal for 1999. Awards for the 1999 campaign will be announced during 2000. The remarkable campaign results for 1997, 1998, and 1999 by the USU community were coordinated by the Leadership and the dedicated staff from the Office of the Brigade Commander along with various activities throughout the USU community.

The 1999 Curreri Award.

Background. Following his retirement as the University President in November of 1976, **Anthony R. Curreri, M.D.** was awarded the Department of Defense (DoD) Distinguished Public Service Award. The award, presented in 1977, cited Dr. Curreri for "collaborating with the military departments and for the development of the overall objectives and goals of the University to develop and implement an educational system of the highest quality to serve the physician manpower needs of the military services." The 1996 Graduating Class of the School of Medicine established the Curreri Award to both recognize exceptional contributions to the continuation and well being of the University and to memorialize the leadership of Dr. Curreri as USU's first President. Since the initial award in 1996, all of the graduating classes (SOM, GSN, and Graduate Education) have participated in selecting the recipients of this award: **1996 - Vorley M. (Mike) Rexroad, BG, U.S. Air Force, (Retired); 1997 - John Dressendorfer; 1998 - Lorraine B. Sanford.**

Colonel Charles C. Partridge Receives the 1999 Curreri Award. On May 7, 1999, the USU graduating classes awarded the 1999 Curreri Award to **Charles C. Partridge, Colonel, U.S. Army (Retired)**. The award recognized Colonel Partridge for his thirty-one year career in the reserve and active forces, especially in his capacity as Division Support Command Commander and Chief of Staff for the 2nd Infantry Division in Korea where he learned the importance of the provision of quality health care for those who served in his command. The award also recognized the significant importance of his 15 years as the Legislative Counsel for the National Association for Uniformed Service (NAUS). In that capacity, Colonel Partridge continuously represented the military associations in their untiring support for USU and for the Military Health System in general.

The 1999 Packard Lecture.

Background. The Packard Lecture Series was named in honor of **David Packard** (September 7, 1912 - March 26, 1996), distinguished friend and supporter of the University. Mr. Packard was Deputy Secretary of Defense when USU was created in 1972. He served as the first Chairman of the USU Board of Regents; and, he was the Acting President of the University from 1976 to 1981. Mr. Packard also served as the first Chair of the Council of Directors of the Henry M. Jackson Foundation for the Advancement of Military Medicine for over six years. The USU Faculty Senate established the Packard Lecture in 1985 to annually honor individuals who have made significant contributions to the military medical community; it is considered among the greatest honors bestowed by the USU faculty.

The 1999 Packard Lecture Features Senator Nancy Kassebaum Baker. The President of the Faculty Senate reported that one of the significant highlights of the Faculty Senate during 1999 was its sponsorship of the 1999 Packard Lecture which featured **Senator Nancy Kassebaum Baker** as the guest speaker. Following her recent retirement from the United States Senate, the Senator has continued to serve on numerous boards and foundations, many with an educational and health orientation. Subsequently, the Secretary of Defense requested that the Senator chair a committee charged with the study and submission of recommendations on how to best train the gender-integrated, all-volunteer Armed Forces and ensure optimal readiness of those Forces. This six-month effort included visits to, and surveys of, a wide spectrum of military recruiting, training and operational units. The subsequent report and well-founded recommendations to the Secretary of Defense served as the focus of discussion for the 1999 Packard Lecture. The lecture was followed by a panel discussion centered on the same topic. The Packard Lecture was well attended and received by the USU community, with numerous external contacts attending. Following the lecture and discussions, a reception was held for Senator Kassebaum Baker and her husband, **Senator Howard Baker**.

The 1999 USU Faculty Senate Research Day and Graduate Student Colloquium - Science in the New Millennium. The USU 1999 Faculty Senate Research Day and Graduate Student Colloquium were held on April 7 and 8, 1999. These significant events were coordinated by the Faculty Senate Research Committee, co-chaired by Terez Shez-Donohue, Ph.D., Professor, Department of Medicine;

Geoffrey S.F. Ling, LTC, MC, USA, Associate Professor, Department of Anesthesiology; and, Charles J. Macri, CAPT, MC, USA, Associate Professor, Department of Obstetrics and Gynecology. The Committee received significant assistance from the Vice President for Research and the Associate Dean for Graduate Education. These research events successfully included participation by all departments of both the SOM and the GSN, and USU's affiliated teaching institutions (Walter Reed Army Medical Center, the National Naval Medical Center, Malcolm Grow Medical Center and their associated research centers). The chosen theme for the events was Science in the New Millennium. The research events included 58 oral presentations in the Sanford Auditorium and 150 poster presentations in two temporarily sheltered areas in the University courtyard. The two days of research events substantiated both the abundance and quality of completed and on-going investigative activity at the University.

Steven Hyman, M.D., Director, National Institute of Mental Health Participates in the Activities. Following the events on April 7th, a formal dinner reception was held in the USU dining hall during which awards were presented. The evening activities closed following an address by nationally recognized, **Steven Hyman, M.D., Director, National Institute of Mental Health. Dr. Hyman** gave a presentation entitled, "Genes and Brain: Can We Master the Complex?" to approximately 180 participants.

Zachary Fisher, Champion of the Uniformed Services Family - A Memorial. It was with the deepest regret and sadness that the USU community was notified on June 4, 1999, that a great friend of USU and of military medicine, **Mr. Zachary Fisher**, had died. Mr. Fisher will be greatly missed by his many friends and associates as well as by the two million members of the United States Armed Forces. He always considered the military to be his extended personal family; those feelings were shared by his USU community.

For many years, Zachary Fisher stood as a champion of the military, through his founding of the Intrepid Museum, the Fisher House Foundation, and the Fisher Armed Services Foundation. His extraordinary philanthropic works in support of those who serve in the Uniformed Services will continue to provide significant benefit for future millions who will serve their Nation. Mr. Fisher also founded the Fisher Center for Alzheimer's Research Foundation and he continuously supported many worthy cultural and educational charities. Three American Presidents referred to him as "America's Greatest Patriot." He will be missed.

The Board of Regents Distinguished Service Medal, which had been awarded to Mr. Fisher, but not yet received, was presented to the family by the University President.

TEACHING AND RESEARCH SUPPORT

Renovation and Upgrades in Support of the Teaching Mission. The Office of Teaching and Research Support successfully coordinated a major renovation of the Sanford Auditorium and USU lecture halls during 1998 and 1999. The USU Multidisciplinary Laboratories (MDL), the Faculty Senate, the Offices of the Deans of the SOM and GSN, and the USU President were aware that the teaching tools available in the lecture halls and auditorium required major renovation. Based on surveys of students, faculty, and staff, an engineering design was commissioned to upgrade the equipment; the project was then expanded to include the replacement of both carpeting and seating. This upgrade to the teaching facilities was in compliance with Goal 1 of the USU Strategic Plan; by upgrading the lecture halls and auditorium, USU has enhanced its ability to 1) provide a quality education to its students, faculty, and staff; 2) conduct continuing medical education; and, 3) sponsor military medical conferences for the MHS.

Conformity of Design. All of the lecture halls were designed with the same equipment and controls so that instructors and students could learn one system and move from one lecture room to the next without readjusting to unfamiliar teaching tools. The new equipment now provides the faculty with a broader range of teaching tools to present their material. The project includes 1) the installation of upgraded audio and projection equipment; 2) the provision of computer capability and Internet access; 3) enhanced video capabilities in each room, to include in-house cameras for overflow viewing in additional rooms throughout the campus; and, 4) "smart" classroom capabilities in Lecture Room C, to include video-teleconferencing and a state-of-the-art audience response system. A major portion of the construction took place during the summer of 1998; equipment installation occurred around class schedules throughout 1998 and 1999. Future plans include similar upgrades to the Board of Regents Conference Room, selected conference rooms throughout the campus, Multidisciplinary Laboratories, and the Anatomical Teaching Laboratory; all of which will increase interactive instruction.

The Learning Resource Center - Globally Available.

"A trip through the Learning Resource Center is likely to reveal an MS-I student reviewing Anatomic-Radiological correlation, and MS-II studying Pathology images or perusing the HyperPharm program, and an MS-III clerk accessing clinical information via university-provided 'MDConsult' or Medline search. SOM students are well-prepared to enter the new age of medical informatics."

School of Medicine Self-study, Section IV, page 5,
submitted during 1999.

World-Wide Access for Health Sciences Information. The USU Learning Resource Center (LRC) is globally accessible over the Internet. As a result, 865 USU students, 305 full time faculty members (civilian and military), over 3,500 off-campus faculty, some 2,600 alumni (SOM and GSN), and numerous collaborative contacts who are assigned throughout the Uniformed Services continue to receive, or can

request, dedicated and immediate responses to their health sciences information requirements. Users of the LRC information services during 1999 could be identified in Kosovo, Japan, Korea, Bosnia, Germany, Italy, Spain, England, Turkey, Greece, Saudi Arabia, on board ships traveling around the world, and throughout the United States. The LRC home page with its numerous information services is available over the Internet 24 hours a day, every day of the year.

Reliability and User-Friendly Access.

"A variety of space is available for student study at the school. The LRC is a favored site because many different types of study space/equipment are convenient to the students. There are 10 study rooms for individual or group study in the LRC. In the Spring and Fall, students can also study at tables/benches located on the second and third floor patios of the LRC. Since the last LCME self-study and site visit, the number of private study carrels in the LRC has been increased from 18 to 64 ... At least 55 PC and Macintosh computers are now accessible in the LRC for students to learn, review and self-test information, utilizing computer-based educational software programs developed commercially and on-site. In addition, the LRC has extended its hours during the weekends before exam weeks and on the majority of federal holidays. A training classroom in the LRC with 11 computers can be reserved for student testing and/or review."

School of Medicine Self-study, Section VI, page 6,
submitted during 1999.

Since its establishment, the LRC continues to diversify and update its resources to meet its customers' changing requirements. For example before a new information resource is moved to the production Internet servers for customer access, thorough validation reviews are conducted to ensure reliability and use-friendly access. The LRC has continuously succeeded in providing an outstanding learning environment and state-of-the-art educational tools for the USU students and faculty.

The LRC Offers Its Services to the Surgeons General. The LRC's ability to provide reference/information assistance through the Internet initiated discussions with the Surgeons General in their capacity as the USU Executive Committee. A steering committee was appointed during 1999 to consider the future use and the resulting cost avoidance of providing the on-line services of the USU medical library throughout the Military Health System (MHS). As recommended by the Chair of the USU Executive Committee, the steering committee membership includes representation from the Armed Forces Medical Library and the Walter Reed Army Institute of Research (WRAIR), as well as from the Offices of the Surgeons General. The steering committee began its deliberations during 1999 by using Group Vine, an electronic discussion software system, available through the Internet.

Internet Information Resources Added During 1998-1999. During the past two years, the scope of the LRC Internet services was expanded to ensure the equivalent of a major medical library. Customers now have access to a one-stop information center, particularly those alumni located at remote sites where first-line patient care must be provided. The following additions were made during Fiscal Years 1998-

1999: 1) **Books.** Electronic editions of standard textbooks were added as soon as they became available. Currently, there are more than 80 books available through the LRC. These include such familiar titles as Harrison's Principles of Internal Medicine, Scientific American Medicine, Cecil's Textbook of Medicine, Current Medical Diagnosis and Treatment, Sabiston's Textbook of Surgery, Conn's current Therapy, Nelson's Textbook of Pediatrics, Merritts' Textbook of Neurology, Griffith's 5 Minute Clinical Consult, the Washington University Manual of Medical Therapeutics, the Harriet Lane Handbook, Campbell's Urology, and Danforth's Obstetrics and Gynecology. Books are also available which cover all of the major medical specialties such as: allergy, cardiology, dermatology, emergency medicine, endocrinology & metabolism, family medicine, general medicine, gastroenterology, geriatrics, infectious diseases, internal medicine, nephrology, neurology, neurosurgery, obstetrics & gynecology, oncology, orthopedic surgery, pathology, pediatrics, pharmacology, psychiatry, pulmonary medicine, rheumatology, surgery, toxicology, and urology. All of these electronic editions are constantly updated and provide current information for the practice of contemporary health care; 2) **Journals.** Conversion to the electronic editions of health-related journals or periodicals continued throughout 1998 and 1999. Numerous titles were added to the Internet production server for the LRC customers. Some examples of these additions include the following: all of the 130 titles published by Academic Press; 50 of the titles published through Highwire Press; the Ovid Journals collections which include 100 titles; and, the MD Consult which includes 48 titles. Specific titles include the American Heart Journal, Pediatrics, Journal of Clinical Investigation, EMBO Journal, Blood, American Journal of Physiology, Proceedings of the National Academy of Sciences, Circulation, Circulation Research, American Journal of Emergency Medicine, Neurology, Medicine, American Journal of Obstetrics and Gynecology, Annals of Surgery, Chest, and Critical Care Medicine, and Medical Clinics of North America, Pediatric Clinics, Cardiology Clinics, Infectious Disease Clinics, Neurologic Clinics, and Surgical Clinics. All of the Yearbooks covering the various medical specialties were also made available; 3) **Practice Guidelines.** With the addition of MD Consult, over 500 Clinical Practice Guidelines contributed by more than 50 medical societies and government agencies are now available through the LRC; 4) **Patient Education.** More than 2,500 patient education handouts, which can be personalized to include special instructions provided by the attending physician or staff, are available; 5) **Continuing Medical Education.** There are more than 300 Continuing Medical Education (CME) Modules; each offers 1.5 Category I credits, for a total of 450 hours of Category I credits, which can be applied toward the American Medical Association Physicians' Recognition Award. The collection provides practical topical updates across eleven specialties of medicine. Each CME test is enhanced with links to related information contained in the electronic books, journals, practice guidelines, and drug information as well as to other web sites with relevant information; 6) **Clinical Topic Tours.** A new Tour is provided each week which allows the user to explore current thought and accepted wisdom on consequential topics in medicine. Establishing a path through a focused collection of information from journal articles, books, drug information, practice guidelines, educational materials, and useful web sites allows the user to refresh his/her medical knowledge; 7) **Today in Medicine.** This module allows the health care professional to stay informed about the newest developments in medicine. The module provides current developments from all of the major journals, government agencies, and medical conferences. Also provided are concise clinical summaries and add links to additional sources of information on the Internet; and, 8) **In This Weeks Journals.** The health care practitioner can keep up with all of the major weekly journals through this module. Key contents of the major clinical journals (Journal of the American Medical Association, the New England Journal of Medicine, the Archives of Internal Medicine, Lancet, etc.) are presented each week in an easy-to-scan format which includes concise article summaries.

Supplementing the Internet Resources. The registered number of users for the LRC remote Internet services continued to expand during 1999. A Reference Services Section is posted on the Internet production servers and currently contains an electronic request form for a mediated literature search as well as an electronic request form for an interlibrary loan for materials not owned by the LRC. During 1998, the LRC installed a flat-bed scanner fax machine to facilitate the transmission of any critical information needs from its printed sources. To facilitate color copying and printing, a full-color imaging system became fully operational during 1998 and was available for use throughout 1999. The LRC continuously works to incorporate the recommendations of its customers in its efforts to provide quality and timely service for the USU community.

Partnership for Peace Information Management Systems. The success of the global use of the LRC initiated a cooperative venture with the Partnership for Peace Information Management Systems (PIMS) during August of 1999. This test project enables access via the Internet to specific medical care information systems for the medical community in the Republic of Georgia; it officially opened for registered users on December 15, 1999. The exchange of health care information is expected to be relevant to the unique preparation of the USU students for operational assignments; outcome assessments will be used in determining the future expansion of this project should funding be available.

Informatics - An Expanding and Essential Component of Education in the Health Sciences.

Background. Efforts in computer-assisted instruction as a study aid for USU students have been ongoing since 1979 when a series of medical students developed, in Apple Pascal, the first drill and practice question bank within the SOM. Course directors provided questions entered into the University Board Review System. In succeeding years several departments (Biochemistry, Pathology, Pharmacology, and Physiology) developed their own on-line exam archives or exam item databases. Over time, this type of material was delivered to students first on stand-alone computers, then on networked computers (HyperPharm, HyperRenal, and others) and most recently as world-wide web (WWW) based sites accessible both inside and outside of the SOM by the Departments of Biochemistry, Pathology, Pharmacology, and Physiology. Perhaps the most ambitious of these recent efforts is the Biochemistry question database of exam questions for testing between 1991 and 1996. This archive is available at <<http://bob.usuhs.mil/biochem/exams/exams-f.html>>.

Image-based study aids have also been developed by the USU faculty. The earliest of these efforts were Radiologic Anatomy, Neuroanatomy, and Chest Film Review laser disc programs developed and deployed between 1985 to 1995 by the Department of Radiology and Nuclear Medicine. In 1996 and 1997, this material was also made available to students as CD-ROMs; and, in 1997, the material was migrated on the WWW at <<http://rad.usuhs.mil>>. The Department of Radiology and Nuclear Medicine has established collaborative efforts with faculty at the Mayo Clinic Foundation and Emory University that provide USU medical students access to the Visible Human data set. Both SOM and GSN students utilize this resource. Another current effort encourages the students to draw correlates between anatomy, physical diagnosis, clinical neurology, and radiology.

The Department of Pathology has digitized its entire 2x2 slide collection, some 1,300 images, used in the MS-II Pathology Course. The images are available to students via the WWW. In addition to the image databank, this WWW site archives old exams and the SOM Pathology Laboratory Manual, and administers 14 quizzes to students during the course.

Computer assisted simulations are used as an integral part of several SOM courses. For several years, the Biochemistry Course (MS-I) has used a human genetics tutorial, developed by SOM faculty. This is supplemented in the clinical years by the internationally used Telegenetics web site authored by the USU OB/GYN faculty (<http://www.usuhs.mil/genetics/>). The Physiology Course provides an acid/base game in which students diagnose an acid/base disorder from patient data on a Davenport diagram, treat it, and see what the treatment does to the patient. Other exercises include body fluid compartments and Yannet-Darrow diagrams, and the control of glomerular filtration. These exercises are treated as a regular laboratory in the course. The Pharmacology Course has included a computer-based pharmacokinetic simulation exercise and a computer-based drug information exercise, available to SOM and GSN students as integral parts of its course, for the last 10 and 5 years respectively (both were designed by USU faculty).

During the 1999 Academic Year, the Department of Anesthesiology, in collaboration with the National Naval Medical Center, used a computer-managed mannequin to teach MS-3 students during their third-year rotation. The simulation focuses upon airway management, the pharmacologic management of shock, cardiac arrhythmia, and other related medical emergencies. This resource is used by SOM and GSN students. The simulator is featured at the Patient Simulation Laboratory web site (www.usuhs.mil/psl/). (This background section was drawn from the SOM Self-Study, Section VI, pages 20-21, submitted during 1999.)

Establishment of a Center for Medical Informatics. Biomedical data and the field of informatics continue to rapidly expand. Processes of knowledge retrieval and decision making are critical to the future health care provider. In light of technology's role in knowledge development, biomedical informatics has become an essential component of education in the Health Sciences. Following graduation, health care professionals must be able to use biomedical information to define, study, and solve problems.

In 1996, decisions were made to establish a Center for Medical Informatics to be placed under the Vice President for Teaching and Research Support (TRS) as an interim step toward the creation of an academic Department of Biomedical Informatics. Since that time, the Center for Informatics in Medicine (CIM) has enhanced USU informatics research and education through introductory computer courses, a workshop on Internet applications in diagnostic pathology, and the development of such diverse areas as websites on educational technology, military graduate education, and HIV in the military.

From 1997 through 1999, a coalition of CIM, the LRC, and the appropriate Dean's Office (SOM or GSN), initiated steps to prepare incoming USU students for the expanded role of informatics in their studies and professional careers. It is recognized that if students are to fulfill the five key roles of health care providers - lifelong learner, clinician, educator/communicator, researcher, and manager - they must have the benefits of a dedicated biomedical informatics program. In June of 1998, the Dean, SOM, appointed a committee to assist in creating the Department of Biomedical Informatics; during 1999, the USU Board of Regents approved the creation of the new academic department.

"Informatics Education. The doctor is the most highly trained individual in the health care system, and as such it is the doctor who should be the final judge of the data entered into the electronic medical record. If the medical record is also a research tool, then this gives a new responsibility and value added to the physician. Educating medical students to do this well is a major challenge. Students who are not exposed to this type of thinking and practical training in medical school will be at a disadvantage when it becomes the norm, as it surely will."

Journal of Investigative Medicine, Volume 46, No. 8,
October 1998, page 345.

The Department of Biomedical Informatics. The SOM's Department of Biomedical Informatics, approved by the Board of Regents during 1999, is recognized as a basic science department with three areas of specialization: bioinformatics, medical informatics, and education. It is conceived as a resource center to extend and enhance already strong curricula through departmental and interdisciplinary courses that will integrate basic sciences with clinical experiences, offer simulated clinical training experiences, continue current teaching efforts in introductory computing, and focus on student-centered learning with case-based, small-group sessions. It will also serve as a clearinghouse for USU informatics applications, and provide a testing facility for informatics research. **The new department, will help to ensure that all USU graduates have a foundation in informatics that will support them, as career professionals, in the Military Health System.** Specifically, the charter for the new department includes the following: 1) support for the curricula through educational technology; 2) extension of the cumcula through biomedical informatics; and, 3) identification and research of innovative informatics applications for military health care.

The Department of Biomedical Informatics will be service-focused. The current, university-wide CIM operations will be retained as the new department's service-based component. Research computing will eventually be reassigned to this department and will no longer be considered a part of University Information Systems (UIS). The department will serve as the center of USU's academic computing support, spear-heading such activities as sequence analysis, statistical computing, and the student web page pilot project. It will also solve problems associated with the University's widely dispersed informatics initiatives. In the past, attempts to incorporate informatics into USU curricula have been handled by individual departments, leaving the efforts vulnerable to collapse if a key member of the department left or was reassigned. The Department of Biomedical Informatics will serve as a central resource into which all departmental informatics endeavors can be incorporated. The department will be gradually resourced over the next five years in accordance with the requirements of the Military Health System.

Initial space for the new activity was made available through the efforts of the Logistics Division. During 1999, while maintaining a consistent level of service, the Self-service Store area/space was reduced by 50 percent; the newly available space was then assigned to the Department of Biomedical Informatics.

National Capital Area Military Medical Simulation and Readiness Center Initiative.

"Military medical and nursing students as well as service medical centers in the Washington D.C. area, have a new place to learn ... Virtual-reality surgery and life-like mannequins that respond as human patients are key teaching tools at the Uniformed Services University of the Health Sciences' new facility."

Air Force Times, "Real-life Medical Training Without Real Lives," page 26, December 13, 1999.

Background. In response to new technologies, but also to the rapid downsizing of the inpatient teaching base, U.S. medical educators have developed a variety of new training and testing tools (trauma and anesthesia simulators, interactive computer based testing (CBT), distance learning, virtual reality applications, and clinical simulations using "standardized patient" actors (SPs). All of these innovations are being rapidly implemented throughout the United States and are being incorporated as new quality standards for medical education and testing. For example, the National Board of Medical Examiners scheduled the implementation of CBT in the U.S. Medical Licensing Examination (USMLE) for 1999; and, clinical testing utilizing standardized patients will be implemented as part of the USMLE Step 2 in 2001. Similar requirements are being discussed by the accrediting entities for advanced practice nurses.

These innovations in medical education conform with the 1995 DoD Medical Readiness Strategic Plan which states: "The use of modern technological advances such as computer simulations and virtual reality has the potential to provide realistic training in battlefield techniques and procedures, and should be pursued to enhance medical readiness training." In July of 1995, the Dean of the USU School of Medicine, and the Commander of the Walter Reed Army Medical Center (WRAMC) established a committee to plan for a model military medical simulation center for the 1) development and use of military medicine databases for education and training; 2) simulation, teaching and measurement of patient interviewing, physical examinations and diagnostic skills; 3) instruction, assessment and documentation of readiness skills; and, 4) focused pre-deployment training. The Associate Dean for Clinical Affairs, SOM, was appointed chair of the planning committee and designated to coordinate the project for the University.

Upon the determination of space and personnel requirements by the planning committee, a building on the WRAMC annex at Forest Glen, Maryland, was identified and approved by the Commander of WRAMC as the location for the center. An initial design study, funded jointly by USU and WRAMC, was completed in September of 1996. Two subcommittees subsequently prepared recommendations on technology and annual cost estimates. In 1997, the concept was briefed to the Assistant Secretary of Defense for Health Affairs and the Surgeons General during a meeting of the TRICARE Readiness Executive Committee (TREC), who referred it to the Defense Medical Readiness Training and Education Council (DMRTEC). Following a briefing on September 25, 1997, the DMRTEC approved the concept and recommended that USU program for funding. In 1998, the President of USU allocated funds for the renovation of the Forest Glen space and the purchase of equipment. The one hundred percent design was completed on August 12, 1998. Funds for the renovation, furniture, and security were obligated on September 30, 1998. Program development and hiring of staff began late in Fiscal Year 1998 and continued throughout Fiscal Year 1999. The construction for renovation was completed during 1999; and,

in September of 1999, the Center began training and testing military physicians, nurses, and medical students.

Multi-Simulation Techniques Under One Roof. While an increasing amount of professional health care training uses simulation techniques, the National Capital Area Military Medical Simulation and Medical Readiness Center may be the only place in the United States that will combine multi-simulation techniques under one roof. Following final coordination for funding with the USU Executive Committee (the military Surgeons General), the Center is expected to be fully functional during FY2000. This state-of-the-art teaching facility allows health professionals to augment their skills through patient simulations, virtual reality applications, and training with mannequin simulators. It will use technology and actors posing as patients to teach students about situations that they may encounter as practitioners but might not otherwise experience while training in hospital wards. Another major use of the Center is the instruction of readiness skills and focused pre-deployment training for wartime, peacekeeping, and humanitarian missions.

Examination rooms in the Center are equipped with cameras and microphones so that instructors can observe the students through television screens from a separate room. In some of the examination rooms, the patients will be actors; they are called standardized patients and, in addition to simulating medical conditions, will have been trained to evaluate the students' interviewing, history collecting, physical examination, and diagnostic skills. Other examination rooms will house sophisticated mannequins programmed to demonstrate altered physiological states and to respond as would a human body when treated for ailments.

Advanced Patient Simulator Presents Scenarios Applicable to Combat Casualty Care, Anesthesia, Critical Care, Trauma, and Emergency Medicine. USU has been using an advanced patient simulator on its campus since the summer of 1997. The USU mannequin and the one being installed at the National Capital Area Military Medical Simulation and Readiness Center at Forest Glen are made by the same company. The mannequin is controlled by a technician seated in an adjoining room. The Technician listens through a speaker system and serves as the voice of the mannequin. The scripted lessons are specifically based on what an instructor wishes the students to learn. The mannequin simulator can present a number of various medical problems and altered physiologic states. A lesson (scenario) may incorporate any number of characteristics and complications including difficult airway management, cardiovascular conditions, allergic reactions, problems with equipment set-up and/or equipment failure. The simulator is designed with an automatic drug recognition system, which allows for realistic drug administration. Drug models include intravenous and inhaled anesthetics, neuromuscular blockers, cardiovascular agents and a wide range of infusion pharmaceuticals which affect the simulator as they would a human patient. Each syringe on the simulator is equipped with a unique computer chip which represents a specific drug.

The patient simulator at USU is being used to train three primary groups: medical students, graduate nurses, and anesthesia residents (Graduate Medical Education). **During their third-year anesthesia rotation, USU's medical students are instructed in the basic fundamentals of anesthesia and the role of the anesthesiologist during surgery. The USU GSN graduate nurses gather experience, like the medical students, in how to connect a patient to external life support sources, such as an oxygen mask, a ventilator, or manual ventilation via endotracheal intubation.** The USU students combine the lessons learned about the physiology of gas exchange and physiologic and

pharmacologic responses while actually performing the procedures and administering anesthesia, without putting a "live" patient, or themselves, at risk. The additional mannequin at the Center will provide additional opportunities for medical and nursing students to experience this exceptional educational tool.

Virtual Reality Telepresence Surgery System. The Center will also provide surgery that is simulated through virtual reality; a simulated learning tool which is already utilized on the USU campus. The USU virtual reality Telepresence Surgery System (TeSS) has gained recognition as an exciting technology training tool. Two USU Class of 1982 graduates, who are also faculty members in the Department of Surgery, have been working with the system since July of 1997. Wearing three-dimensional glasses, students place their hands on a surgical instrument. Peering into a video screen, the Center's students will be able to "touch, tug, cut, or sew" the tissue displayed on the screen; they will actually "feel" the movement. The reach-in display table issues a report on how well the student performed during the procedure.

Interactive Computer-Based Testing Laboratory. Included at the new Center is a computer lab with 16 work stations to familiarize students with software applications and interactive computer-based testing. The Operation and Maintenance costs for the Center are expected to be partially offset through the use of the computer-based testing laboratory by medical and nursing students from USU and the military treatment centers throughout the D.C. area as they prepare for their computer-based testing/certification requirements. The Center will also generate cost-avoidance through the provision of readiness training and distance learning for the Military Health System as requested by the Surgeons General.

Research Administration.

"The University will build, sustain, and publicize interdisciplinary research programs relevant to the needs of the Uniformed Services."

Goal 3, USU Strategic Plan, October 1999.

Background. The Office of the Vice President for Research was established at USU to facilitate, promote and oversee the research activities at USU. The position of the Vice President for Research evolved through recommendations from the USU faculty; following an extensive search, the first USU Vice President for Research, Ruth Ellen Bulger, Ph.D., was appointed during March of 1996. The Office of Research monitors, reviews, and coordinates approvals for all matters dealing with research at the University, to include the following responsibilities: identification of funding sources (the Office of Research's Home Page includes a database to search for research opportunities); pre-award administration; post-award administration; grant award and receipt; human participant research program and the institutional review board (IRB) approval; and, the monitoring of all regulatory compliances. It also runs the intramural grant program and staffs the SOM Merit Review Committee that is involved with the peer review of applications for intramural funding. This year, the Office of Research also took over the

administration and peer review of instructional development (replacing a committee that had previously had those functions). Symposia have also been coordinated by the Office of Research Administration during Fiscal Years 1997, 1998, and 1999 on how to "Write Winning Grants" (in both lecture and hands-on formats), the "Protection of Human Subjects," and "Communicating Science." The Office of Research Administration provides service to three groups of customers: faculty investigators, the University, and its approximately 74 funding organizations.

Approximately 470 active research protocols at USU cover an inclusive variety of scientific areas, including basic biomedical areas of high relevance to the mission of the Military Health System, such as: infectious diseases; sepsis; combat casualty care; operational medicine; nuclear, biological, and chemical interactions; disease prevention and health promotion; Defense women's health issues; TriService nursing; military performance factors; and, responses to the stresses of military life. Research finding for Fiscal Year 1999 had a 37 percent increase over the amount received in Fiscal Year 1998. Funding from the National Institutes of Health for USU faculty increased 28 percent during the last fiscal year (see Appendix C for examples of individual achievements and recognition).

Research Concentrates on Diseases of Military Relevance. Many Research protocols at USU study diseases of high military relevance for troop deployment and sustainment. For example, malaria is endemic in many areas where the military deploys its fighting forces; recent technological advances conducted by USU researchers have made it possible to predict mosquito population levels and disease transmission risk within precise areas and time frames. By using satellite imaging and remote sensing, USU researchers assist in predicting high-risk locations for malaria occurrence. These predictions focus disease control operations and conserve scarce finances and human resources. Some of the infectious diseases being studied at USU include the following: malaria; Venezuela equine encephalitis (VEE); leishmaniasis; and, bartonellosis. Examples of additional areas of research focus include: determination of the most appropriate site for effective immunization against a variety of microbial agents; identification of heretofore unknown bacterial virulence genes; and, analysis of how selected viruses assemble and cause pathology.

Research Relates to Combat Casualty Care. Research contributed by USU faculty relating to combat casualty care continues to provide rapid diagnostic methods and treatments which ensure military readiness, excellent care for deployed fighting forces, and the rapid return of the injured and sick to active duty. Numerous research protocols dealing with combat casualty care focus on five general subject areas: 1) blood preservation and delivery (i.e., effects of cross-linked hemoglobin in traumatic brain injury; global and local responses to profound hemodilution; and, environmental hazards and heme regulation); 2) treatment of nerve injury and healing (i.e., low power laser irradiation on in vivo nerve regeneration; and, neurocytokines and plasticity in sensory nerve injury); 3) prophylactic intravenous antibiotics for penetrating eye injury; 4) understanding, preventing and treating endotoxic shock; 5) wound healing and sepsis (i.e., characterization of inflammation and its mediators); and, 6) the treatment of traumatic injury.

Research Directed Toward Military Operational Medicine. Most of the research protocols in the subject area of military operational medicine fall into three general categories: 1) factors decrementing human performance (i.e., acute and chronic Post Traumatic Stress Disorder (PTSD); and, hyper- and hypothermia); 2) factors increasing military readiness (i.e., human performance models for exercise; and,

reduction in acute and chronic injuries); and, 3) endocrine control and performance (endocrine and immune interactions with exercise; and, human stress and trauma).

Enhancement of Administrative Services. During 1999, a new Grants Management Database was customized by the Office of Research Administration (REA). Now, each grant is classified according to its appropriate interdisciplinary area which allows the Office to have an accurate record of grants and to expeditiously produce grant reports as required. Efforts to monitor and improve protocol processing time were implemented during 1999; processing time for the majority of grants is currently only two or three days (unless processing involves external permission issues). A new pre and post circulation form ensures that all steps are followed. In addition, to obtain baseline information on faculty performance, changes were made in the yearly faculty evaluation form to reflect productivity in areas of research interest. Currently, there are six areas of emphasis: behavioral and neurosciences; cell and molecular biology, including genetics; infectious diseases and tropical medicine; casualty care and operational medicine; health maintenance and disease prevention; and, integrated systems biology. All of the research projects in the database were classified so they can be searched by area.

The USU Research Home Page (www.usuhs.mil/research) was expanded and updated during 1999. Improvements include more pertinent, user friendly grant-related information and an increased ability to download forms. The Office of Research Administration also created a new statement of Principal Investigators' Responsibilities which was circulated to all principal investigators for review and must be signed by the investigator as part of the submission of every protocol.

The USU Intramural Program consists of 84 military-relevant protocols, 33 non-militarily relevant awards, 4 educational awards, and 50 graduate student awards. All applications are reviewed by the Research Merit Review Committee. During 1999, the military-relevant standard awards were funded at 90 percent of the recommended amount; and, the non-militarily relevant awards were funded at 70 percent of the recommended amount (except for new faculty within their first three years of intramural support, who received 90 percent).

Institutional Review Board. The Program for the Protection of Human Participants in Research is of great importance to the research environment at USU. The Director, Scientific Activities, Office of the Assistant Secretary of Defense for Health Affairs, conducted an audit of the USU IRB Program during July of 1997. He found no significant deficiencies and suggested two minor additions to the USU Instructions; the relevant USU Instructions were amended as recommended. Following that audit, an additional staff position, an IRB Coordinator, was added to the Office. REA administered the Institutional Review Board (IRB) during 1999. The office approved and monitored 225 protocols at USU that involved human participant research. To strengthen the program, during 1999, investigators were encouraged to have pre-application discussions with the Research Administration staff; and, letters and minutes from the IRB meetings were promptly written and distributed. New IRB members were supported for educational courses on human participant issues and regulations, such as the annual meeting of Public Responsibility in Medicine and Research. Faculty and graduate student teaching sessions by REA staff were conducted for all requesting departments.

The Food and Drug Administration (FDA) has cognizance over Federal IRB Programs where research is conducted on investigational new drugs and devices. As some USU research falls under these areas, the FDA has the authority to audit the entire USU program. On March 22 and 23, 1999, an FDA

inspector conducted a two-day audit of the USU Human Use Programs and the IRB. The audit included a review of all IRB minutes for the past two years and a random sampling of protocols with greater than minimal risk to human subjects. USU was notified by the Division of Scientific Investigations, Office of Medical Policy, Center for Drug Evaluation and Research of the FDA that its investigator had found that no corrective actions were needed. USU's procedures for the protection of human subjects in research complied with the governing regulations, Title 21, Code of Federal Regulations, Parts 50 and 56. **Both audits have demonstrated that the USU Program for the Protection of Human Participants in Research is serving the USU research environment in an outstanding manner.**

Facilitation of Institutional Review Board Review of Multi-Centered Trials in the National Capital Area. Clinical investigators wishing to take part in multi-centered clinical trials throughout the National Capital Area have met with multiple administrative problems, to include being required to complete more than one set of differing protocol application forms and informed consent documents as well as having to follow multiple IRB review recommendations. To simplify the process for meeting multi IRB approvals, the Office of the Vice President for Research coordinated with counterparts in the human participants research offices of the National Naval Medical Center, the Walter Reed Army Medical Center, and the Malcolm Grow USAF Medical Center. During 1999, the development of common informed consent forms and common application forms was completed by the combined efforts of the above mentioned organizations. For this process to work expeditiously, each institution must have a Multiple Project Assurance (MPA) that references the other institutions in order to accept primary review from that institution. The Walter Reed Army Medical Center and the National Naval Medical Center are revising their MPAs and working toward obtaining concurrence for the new process from their Service Secretaries. USUHS is submitting an application to OPRR to join the process.

University Establishes Collaborative Relationship with the Stanley Laboratory of Brain Research. In February of 1999, during a ribbon-cutting ceremony, the University President welcomed the Stanley Laboratory of Brain Research to the SOM Department of Psychiatry. Through a collaborative arrangement with the University, the School of Medicine, and the Stanley Foundation, the USU community will now have access to the Stanley Laboratory's approximately 300 brain specimens from individuals who suffered from diseases such as schizophrenia, bipolar disorder, and severe depression - the largest of such collections in the world. **E. Fuller Torrey, M.D.**, and his research group bring outstanding expertise to the University.

USU Barrier Facility. A Barrier Facility occupying approximately 2,558 square feet within the USU Central Animal Facility and capable of housing 6,000 mice was opened during 1999. This resource was conceived and developed by the Vice President for Teaching and Research Support and USU research investigators. It was constructed to accommodate the needs of USU investigators whose research requires a facility where mice can be kept under ultra clean conditions, with minimal likelihood of pathogen exposure. The facility also has the capability of producing transgenic mice (mice which have been altered genetically to simulate disease states or modified biochemical conditions). While USU investigators will

have first option for using this available space, it is anticipated that the University will share this facility with investigators from other military institutions; Major Andrew Wilkinson, Deputy-Director, LAM, will coordinate requests from other institutions during Fiscal Year 2000.

The Barrier Facility has a staff composed of one full-time trained Barrier Technician who is supported by a designated Animal Husbandry Division Caretaker. The Barrier consists of four sections: an autoclave area with two physically separate rooms; five clean animal holding rooms; one procedure room, a laboratory for transgenic mouse procedures; and, a storage area. The requirements for the heating, ventilation, and air conditioning system (HVAC) were coordinated through the USU Facilities Division. The renovated HVAC can provide 100 percent fresh air into the Barrier Facility; the air supply is balanced such that it is positive to the remainder of the Central Animal Facility which protects the Bamer mice from possible contamination. The main corridor of the Bamer is equipped with two HEPA-filtered ventilation units to reduce particulate matter which, along with positive air pressure, provides further protection against contamination. The autoclave is also capable of sterilizing all animal feed, water, bedding, cages, and accessories prior to entry into the Barrier. Cages are ventilated with HEPA-filtered air which also significantly reduces contamination. Transfer of mice from dirty to clean cages is performed in a positive laminar flow cabinet, which prevents the transmission of pathogenic agents. Admittance to the Barrier Facility is restricted to those individuals working in supporting the Barrier. All personnel who enter the facility receive individual instructions and follow written procedures which include the use of Personal Protective Equipment.

Information Technology.

Background. During 1994, committees were formed at the University by the School of Medicine and the Faculty Senate to address USU's future use of computers and technology in general. With the future development of Information Technology and Medical Informatics at USU in mind, the University President sent a delegation of seven USU representatives to the American Association of Medical Colleges (AAMC) Information Technology Conference. The conference served to reenforce the University's inclusion of computer assisted communication and technology within its strategic planning process. With total support from the leadership at USU, strategic goals were developed so that Medical Informatics would be utilized to emphasize distance learning, continuing medical education, computer assisted medical education, access to medical databases, and other medical information systems. The focus of those efforts, in accordance with the University's mission, would be on the unique educational requirements of military and disaster medicine. In October of 1997, a number of USU information technology-related committees were combined to form the Automated Information Systems Policy Committee (AISPC). This committee, meets twice each month to review guidance objectives, identify resources, develop requirements, and plan information technology policy strategies, and training.

Desktop Computers. Following Assistant Secretary of Defense, Health Affairs (ASD/HA), guidance, a plan to lease desktop computers by the University was implemented during 1998 and 1999. This plan calls for all basic office automation and teaching computers to be replaced with leased systems over a three-year period. The process will provide standardization, technology refreshment, budget planning, Y2K compatibility, and improved user support.

A set of desktop tools, also based on ASD/HA guidance and USU requirements, was recommended by the AISPC and approved by the USU President. The selection of a single set of desktop tools greatly simplified user support and improved the Help Desk response during 1999. To fully support the system, which is partly based on Microsoft Office software, the University joined a partnership with the University of Maryland that will provide site licenses at significantly reduced educational rates. University Information Systems will continue to support the main frame-based financial management system with additional services for users being tied to the central system, the time keeping system, the PPI Personnel Program, the SAS Statistical Program, and the GCG Genetics Program for users who require those capabilities.

The use of Departmental Information System Coordinators has been reactivated with training sessions held approximately every other month. Self-help training videos and tapes have been made available for newly selected desktop tools. Prepaid vouchers for computer training at a commercial center were distributed to individual users throughout 1998 and 1999. University Information Systems personnel have received training "passports" and other sources of advanced computer training. The Help Desk has maintained a Web Page with useful information and provided a Tip of the Week to every E-mail address. In addition, throughout 1999, the Vice President for Teaching and Research Support published an electronic monthly information technology newsletter.

Infrastructure Improvements. In response to user concerns, available long-range technology refreshment plans, and the USU Strategic Plan, extensive technical improvements were made during 1999: **Servers:** Twenty file servers were upgraded to ten state-of-the-art high performance systems. **E-mail:** Five separate E-mail systems were converted to Novell Group Wise 5.2 and later upgraded to version 5.5. This action standardized formats, address books, and addresses. It also provided Internet access, a highly desired post office protocol *server*, and improved the use of attachments and external E-mail. **University Homepage:** the USU Homepage now contains over 2,362 pages of information and some 33,055 links to additional information; the vast majority of USU departments now have active homepages and many are sharing teaching and research information via the Internet on a regular basis. **Mail Gateway:** A mail gateway was created and installed to direct all E-mail to the new GroupWise system. **Network:** The network was upgraded from a 10 mega-bit (MB) coaxial cable to a 100 MB twisted pair system. **Internet Access:** Access was upgraded from a 1.4 MB T-1 line to a 10 MB asynchronous transfer mode connection. **Operating Systems:** All systems were upgraded and are Y2K compatible. **Telephone Modems:** Modems were upgraded from 16 slow systems to 48 V.90 56K systems. **Bulletin Board:** The Bulletin Board was upgraded from a character-based VAX system to a user-friendly and Internet-based program. **Teaching Facilities:** Lecture halls and conference rooms were upgraded with state-of-the-art, automated multimedia teaching systems. One area has an audience response system. **Video Teleconferencing:** Capabilities were established at additional sites at the University. **Oracle Database:** Software was established on a series of servers to support the Enterprise Database. Conversion of legacy systems to the Oracle-based Enterprise system was initiated during 1999.

Enterprise Data Base. The concept and plans for the in-house development of an Enterprise Database were approved by the USU President during 1999. This system will combine some 56 "stove pipe" software support programs, created in a variety of software, into a single, fully relational database with user-friendly interfaces. The system will eliminate multiple overlapping records and duplicate entry requirements; it will create a single source for accurate records and processes, and eventually provide a

host of powerful management tools. A study designed to determine whether to make or buy a new Registrar's Program was an important factor in the decision to develop this in-house system.

Strategic Goals for 2000. The Strategic Plan was limited in the number of on-going objectives for Information Technology. Therefore, a large number of short and long-range strategies/objectives were identified that fall into three major categories: infrastructure, educational support, and resource management. Along with these new strategies, the AISPC identified time frames, responsible individuals, and basic metrics. During 1999, the AISPC initiated the process of re-drafting Goal 2 to reflect the additional strategies and objectives.

Technology Transfer. Recognizing the need to monitor and market the growing patent and intellectual property developed by the University faculty, the USU President determined that the Technology Transfer Program, initially an additional responsibility in the Office of the General Counsel, should be recognized as a formal entity within the University. The USU Technology Transfer Program was formally recognized through several initiatives during 1999. In April of 1999, the USU Center for Technology Transfer was established; the Center's staff reports to the Vice President for Executive Affairs.

Mission of the USU Center for Technology Transfer. Following an inventory of existing University/Henry M. Jackson Foundation property, a joint operating policy will be devised to exploit new inventions resulting from the faculty's ideas by licensing agreements with industry. Educational plans include seminars on disclosing inventions, patent protection, and technology transfer. The Vice President for Executive Affairs also established a web site for Intellectual Property and for the new Center for Technology Transfer during 1999.

RESOURCE STEWARDSHIP

"USU will determine suitable space requirements and acquire requisite facilities."

USU Strategic Plan, Goal 4, Strategy, 4.1.3.

New Construction on the USU Campus.

Background. Between September 1993 and December 1997, USU was prohibited from participating in the military construction process. However, following the December 1997 decision of the Secretary of Defense that the University should remain open through Program Budget Decision 711, the Vice President for Administration and Management (VAM) was directed by the USU President to provide oversight for the resubmission of all documentation and related efforts required for the construction of a fifth building on the USU campus. The VAM coordinated all efforts with the Vice President for Resource Management and the Deans of the SOM and GSN.

On April 4, 1997, a Health Affairs site team determined that the construction of a fifth building at USU in Fiscal Year 2001 would eliminate leasing costs and would be cost-effective. Following that determination and extensive coordination by the VAM, on March 26, 1998, Design Authorization 98-N-10 was provided to the Naval Facilities Engineering Command with the following directions: 1) the inclusion was to take place in Fiscal Year 2001; 2) the scope of construction was to include 8,312 gross square meters; 3) the design amount was \$15,000,000; and, 4) DD Form 1391 and a Draft Program for Design were provided with the authorization. The Navy Facilities Engineering Command completed its call for contractor bids on the design requirements for the USU construction project and remained on hold until the USU construction was approved by Health Affairs. In May of 1998, Health Affairs determined that construction at USU would not be included in the Fiscal Year 1999 Defense Health Program (DHP) MILCON package; and, the Surgeons General would be required to identify funding from their Medical Construction Programs if the USU project were to be included in the DHP MILCON Program. In June of 1998, the Senate Committee for the Military Construction Appropriation Bill for 1999 urged "the Department of Defense to address the requirement for a fifth building construction project in the Fiscal Year 2000 budget." In December of 1998, the USU President resubmitted a request to Health Affairs requesting that the construction costs of the USU building be addressed as a separate entity and not be resourced from the limited construction budgets of the Surgeons General.

Current Developments. During 1999, the Military Construction Appropriations Bill for FY2000 included the following: "The Tricare Management Agency is directed to accelerate the design of this project (the construction of a fifth building on the USU campus), and to include the required construction funding in its fiscal year 2001 budget request." In response to the congressional directive, and, in its capacity as the Executive Agent for USU, on October 26, 1999, the Navy Bureau of Medicine (BUMED) Facilities Planning and Programming Division initiated the contracting process for a Project Planning Study. The first phase of the USU Project Planning Study, to develop a quantifiable needs assessment for space, began on December 6, 1999 at the USU campus. To facilitate the verification of the study, the Office of the Surgeon General of the Navy also established a review committee to discuss and validate the identified requirements with appropriate entities within the MHS; and, the USU President established

an ad hoc committee to assist the VAM. To accommodate the rapid turn-around of the first phase of the study, which was to be provided in draft form to the TriCare Management Agency by late January of 2000, the VAM organized and provided to all concerned parties, inclusive notebooks providing background documentation, projected space requirements, and mission related information for the entities included in the Planning Study: the Graduate School of Nursing; USU-wide small classroom requirements; Continuing Education for Health Professionals; the Military Training Network; Graduate Medical Education (to include the Administrative Office for the National Capital Consortium); the Office of Educational Affairs (to include USU readiness and simulation requirements); Preventive Medicine and Biometrics TriService Tropical Medicine and Master of Public Health Programs; the TriService Nursing Research Program; and, requirements of the Office of the USU President, to include the USU Chaplain. Following verification of the needs assessment, the VAM will coordinate the next phase of the Planning Study as directed by BUMED.

Navy Base Allocation of Space to USU. Throughout 1998 and 1999, the Vice President for Administration and Management (VAM), as directed by the USU President, coordinated with the National Naval Medical Center (NNMC) for the reallocation of space currently occupied by the Naval Medical Research Center (NMRC). NMRC began its relocation from the Naval Base to the Forest Glen community near the Walter Reed Army Medical Center during 1999; the relocation process is projected for completion during January of 2001. (Only Building 59 was made available to USU by NMRC during 1999.)

Inclusive reviews were conducted by the Vice President for Administration and Management and coordinated with the Vice President for Resource Management to ensure that minor renovation and maintenance costs could be absorbed within the USU budget. Upon confirmation of funding, and following the VAM's coordination with NNMC which resulted in the completion of four separate Memoranda of Understanding, USU will assume responsibility for Buildings 53, 59, 79 and 28 as soon as they are vacated by NMRC. Building 53 currently has 12 large laboratories and over four thousand useable square feet of administrative space. At the request of the USU President, the Dean of the SOM requested that his space committee make recommendations through him to the USU President for the allocation of the space within Building 53. That process continued throughout 1999.

Building 59 has 2,800 square feet of useable space which includes an immersion pool/tank, a physiology lab, an instrumentation lab, and divers' lockers. In addition to two research grants administered by the Department of Military and Emergency Medicine (Ergogenics in Special Operations and Tyrosine Effects on Performance), the immersion pool would also facilitate the study of the degradation of performance during mission-related tasks/operations conducted by the Department of Defense. In addition, the course work presented in the Military Applied Physiology Course would be significantly enhanced by directly exposing students to ongoing applied research. Course work in Operational Emergency Medicine Skills would attain the same benefits by direct association with applied research projects. Building 79, adjacent to Building 59, offers 1,194 square feet that would mostly be used for an exercise physiology laboratory for performance testing.

Building 28 has 5,125 square feet and will be principally used for storage. The Logistics Division will use this space to assist the USU community in the storage of large research/medical equipment, etc.

Renovation of Research Laboratories. During 1999, with the approval of the USU President, and the identification of funding by the Vice President for Resource Management, the Vice President for Administration provided oversight for the revision of 11,535 square feet of laboratory space throughout the USU complex. Laboratory renovation was completed, through the Dean, SOM, for the Departments of Physiology, Pathology, Anesthesiology, Dermatology, Biochemistry, Pediatrics, and Surgery.

With the 19,282 square feet of renovated laboratory space that took place from 1993 through 1998, the total renovated laboratory space now totals approximately 30,817 square feet. This amounts to 35 percent of the 86,926 square feet of laboratory space in the USU complex; laboratories which were constructed approximately twenty-five years ago.

Management Improvements Programs. Two major programs were successfully implemented during 1999 which presented significant challenges to management and staff at the University: the Government Purchase Card Program and the Travel Card Program. Both programs required a significant amount of training and discipline in order to achieve the programs' objectives. Both programs have the potential for significant savings in overhead costs by decentralizing purchasing and approval authority to department and activity levels. They also produce benefits for the user in that the delivery of purchases is quicker and the processing of travel vouchers has been expedited. The University was the first DoD organization to mandate the use of the travel card by all travelers. Through great effort and cooperation on the part of the staff within Resource Management and the USU community, these new programs are now a part of every day USU management procedures.

YEAR 2000 TECHNOLOGY ISSUES

Successful Preparation.

Background. The Vice President for Administration and Management was tasked by the USU President in January 1998 to coordinate the Y2K efforts for the University. Initially, the VAM established a Y2K Task Force to develop a plan and oversight for the implementation of a process to ensure compliancy for Y2K. **Ms. Harriet Hughes**, a consultant, was hired in March of 1998 to advise the Task Force and to coordinate its efforts. The primary membership of the Task Force consisted of representatives from the University Information Systems (UIS), the Technical Services Branch (TSB) of the Logistics Division, the Facilities Division (FAC), the Resource Management Information Office (RMI), the Civilian Human Resources Directorate (CHR), the Office of the Brigade Commander (BDE), the Armed Forces Radiobiology Research Institute (AFRRI), and the Henry M. Jackson Foundation (HJF). In addition, the USU Vice President for Teaching and Research Support and the Vice President for Resource Management provided extensive support throughout the process.

The USU Y2K Strategic Plan was based on DoD and GAO recommendations and placed on the USU web site for general review during April of 1998; revisions to the plan were completed and posted to the Web in July of 1998. The awareness Phase took place throughout 1998 and included briefings to the President, the Board of Regents, the USU Senior Staff, the Faculty Council, and the Information System Coordinators. Assessment Phase activities were addressed during 1998 with the development of lists of potential problems. The Renovation and Validation Phases, and the USU Contingency Plans were developed during 1998 and completed during 1999.

USU Met All Y2K Requirements. The University experienced no problems on January 1, 2000 due to the tremendous efforts of the Y2K Task Force and the cooperation of the entire USU community. The Vice Presidents for Resource Management and Teaching and Research Support provided essential support throughout the entire two-year effort. All phases of the Y2K process (awareness, assessment, renovation, validation, and contingency planning) were successfully completed before December of 1999. Certification of readiness for Y2K was sent to BUMED by the USU President on December 10, 1999.

Biomedical and Laboratory Equipment. Over 3,000 items included in the data base for USU biomedical and laboratory equipment, were individually assessed, renovated where necessary, and then validated. The Technical Services Branch of the Logistics Division utilized the Federal Drug Administration's World Wide Web site which provided information on the Y2K status of medical devices and scientific laboratory equipment. In addition, a similar database belonging to the Navy Medical Logistics Command at Fort Detrick was also accessed by TSB. All items were coded (compliant, compliant with work-around, upgradeable, or not upgradeable). The initial USU database consisted of 16,500 records; following a complete inventory of the USU complex, this total was reduced to 3,000. The entire USU community cooperated throughout this effort. During January of 1999, USU activities and departments prioritized "repair and replacement" decisions. Before December of 1999, only 28 items were marked "not upgradeable;" and, 25 items were eventually turned in for disposal. In addition, 53 items were compliant with work-arounds such as manually resetting the date. Complete records of the Y2K process are available in TSB. All USU property management records were updated accordingly by the Logistics Division.

Other Equipment. The Facilities Division completed the Assessment Phase for "other equipment" during 1998. No Y2K problems were identified for the utility meters, the air handling unit computer monitors, fire alarm system, elevators, clock timers, audio-visual equipment, facsimile machines, copiers, card readers, security systems, cafeteria cash registers, or vending machines. Only the Laboratory Animal Medicine security system had to be repaired. The Defense Telecommunications Services of Washington successfully brought the telephone switching system into compliance during mid-1999; and, Pepco, the electric company, verified compliance during the summer of 1999. Electrical testing will be conducted by the Facilities Division during the summer of 2000 to ensure that both the University's and the individual investigator's contingency plans are sufficient for protecting research materials and information.

Computers. An inventory and assessment of all hardware, off-the-shelf software, and in-house USU developed applications were completed under the supervision of the University Information Systems (UIS) Division. Mainframe software certification was obtained by UIS during 1998 from vendor web sites. All of the USU E-mail systems were migrated to a Y2K compliant system during 1998. New network hardware was purchased and installation completed during early 1999. An inclusive PC hardware survey and assessment was completed by the Y2K Task Force and administrative representatives from all USU activities and departments during September of 1998. It was determined that a significant amount of USU's personal computer inventory was obsolete regardless of Y2K issues (included were pre-286, 286, and 386 computers). **Based upon that assessment, USU leased a total of 555 compliant PCs by the end of 1999.** Most non-compliant PC systems were replaced during early 1999 which allowed sufficient time for the following: training on the new software; all critical non-compliant databases to be transferred into compliant software; and, the date fields to be expanded and brought into compliance. Some non-compliant PCs were retained, with work-arounds, to run laboratory equipment where the software required the old system; such equipment is not connected to the USU main systems. By December of 1999, some 483 PCs had been excessed through the DoD Property Disposal System; and, some 239 PCs had been turned in to the Property Management Branch and were awaiting disposal. **As of December 31, 1999, there were 1,373 compliant computers listed on the USU property management records.** A tremendous effort on the part of the Directors of UIS and Logistics, with significant participation on the part of the Vice President for Teaching and Research Support, enabled the University to successfully complete the Y2K assessment, renovation, and validation phases for personal computers.

Personnel Systems. The databases used by Civilian Human Resources (CHR) were mostly Y2K compliant at the beginning of 1998. The faculty database was already compliant; and, the training databases were migrated to a new, compliant personnel system during 1999. Two major software systems that did not reside on USU computers, which were accessed through the Internet, were identified as having a critical impact if not Y2K compliant: the Defense Civilian Payroll System (DCPS) and the Defense Civilian Personnel Data System (DCPDS). The Civilian Payroll System was validated as compliant during 1998 by the USU Office of Resource Management Information; the Defense Information Systems Agency (DISA) confirmed in November of 1998 that the DCPDS was Y2K compliant. Both of the external faculty retirement plans confirmed that they were compliant by late 1998. The Office of Civilian Human Resources reported that there were no problems experienced by DCPS, DCPDS, TIAA/CREF or Fidelity following the date change to January 1, 2000.

College and University Financial System (CUFS). Renovation of the College and University Financial System (CUFS), USU's only COBAL system, was completed by the Resource Management

Information Office (RMI). Interfaces with systems that share data were worked out and tested. The testing of all interfaces was completed as external organizations finished their Y2K renovations. Initial validation testing was completed during 1998. Operational use of the renovated software took place in mid-1999. There were no problems experienced by the USU community following the date change to January 1, 2000.

Armed Forces Radiobiology Research Institute. A computer assessment was completed during 1998 by the Armed Forces Radiobiology Research Institute (AFRRI); there are some 200 PCs at AFRRI. Before December 1999, all, but a few lab systems, were Pentium PCs running Windows-95, and compliant. The primary software package (Microsoft Office) was Y2K compliant. In-house software was mostly written in Microsoft Visual Basic and Y2K compliant. The LINAC and Cobalt facilities were compliant. The reactor, to include the nuclear reactor console, the network and maintenance modules, was addressed during 1999, under the supervision of the AFRRI Director. No reported problems were identified by AFRRI with the date change to January 1, 2000 for the 1,428 items listed by the Biomedical Maintenance Shop, the communications systems, or the AFRRI security access/monitoring systems.

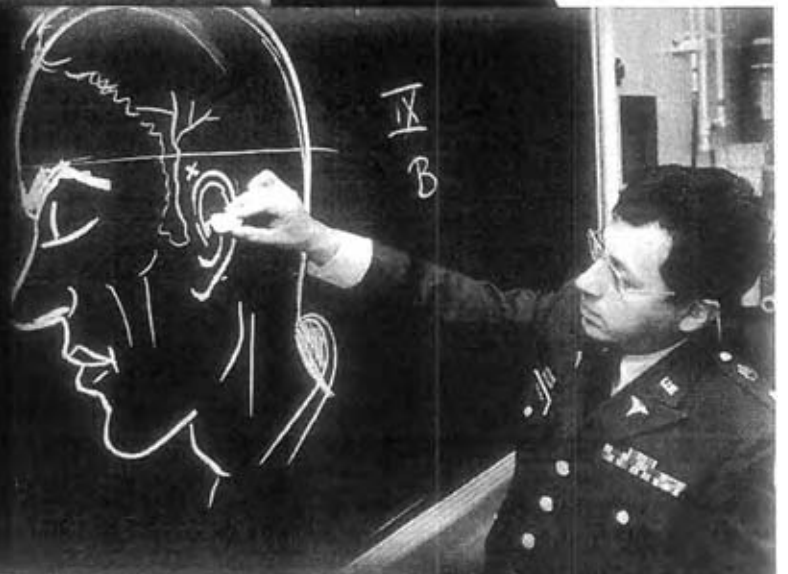
Henry M. Jackson Foundation. The Henry M. Jackson Foundation (HJF) completed the replacement of all existing computer hardware and software attached to the Local Area Network with Y2K compliant systems by June 1, 1998. For other equipment such as security systems and fax machines, HJF contacted the manufacturers for compliance requirements. The telephone system at HJF Headquarters was replaced with a compliant system. CUFS Y2K upgrades were completed. HJF replaced its Human Resources Payroll System with a compliant system during 1999. HJF contacted the appropriate project managers during 1998 and 1999 to ensure the compliancy of all research equipment. The USU Technical Services Branch also maintained a listing of all HJF research equipment located on the USU campus and worked out concerns where necessary.

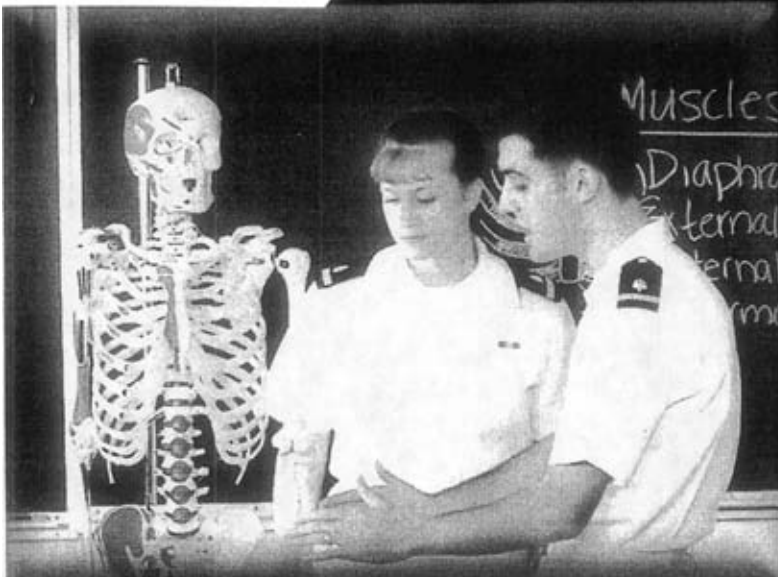
Readiness



MISSION

The Uniformed Services University of the Health Sciences is the Nation's federal health science university and is committed to excellence in military medicine and public health during peace and war. We provide the Nation with health professionals dedicated to career service in the Department of Defense and the United States Public health Service and with scientists who serve the common good. We serve the uniformed services and the Nation as an outstanding academic healthsciences center with a worldwide perspective for education, research, service, and consultation; we are unique in relating these activities to military medicine, and military medical readiness.









II. THE F. EDWARD HÉBERT SCHOOL OF MEDICINE

"The Uniformed Services University of the Health Sciences (USUHS) is the Military Medical Academy and is an essential and irreplaceable resource for high quality physicians who are military leaders....USUHS should be continued as an essential component of medical readiness in order to support the operational mission of the Navy and the other military services."

Chief of Naval Operations (CNO) Response to Congress, dated March 15, 1999.

ESTABLISHMENT

Background. From 1945 to 1950, there was an acute deficit of medical experience resulting from the rapid downsizing after World War II. The loss of physicians was so acute, and retention so poor, that the Army and Navy medical departments began residency programs as a recruitment and retention device. In 1950, the physician shortages forced the involuntary recall of reservists and also forced the retention of those eligible to retire.

After the Korean War, the United States, for the first time in peacetime, maintained large, active-duty military forces through conscription, and allocated significant resources to build and maintain a world-wide military presence. The medical departments of the Army, Navy, and Air Force participated in this expansion and relied on conscription. During this time, over 90 percent of all graduating physicians and dentists served on active duty for an average of two years.

During the conflict in Vietnam, from 1964 to 1972, medical support of a sophisticated nature was deployed in fixed facility hospitals with staff and equipment equal to those of academic medical centers in America. The helicopter essentially replaced the motor ambulance for evacuation; and, air evacuation to the United States became routine. Capitalizing on the lessons learned in past wars, preventive medicine kept the infectious disease and non-effectiveness (inability of the forces to participate in combat activities) rates at the lowest levels of any war, while rapid evacuation and advanced surgery reduced the died-of-wounds rate.

The conscription of physicians, which began in 1950, ended in 1973 when the draft law was repealed. In anticipation of this, a military medical school (USUHS) and a scholarship program (HPSP) in civilian medical schools were established by Congress in 1972 to provide physicians for the Armed Forces. The Uniformed Services Health Professions Revitalization Act of 1972, Public Law 92-426, established the HPSP Program to be a flexible source for the quantity of physicians required by the Armed Forces; USUHS was established to provide a cadre of military medical officers who would serve as career officers, providing continuity and leadership for the Military Health System.

USU's First Academic Program. The F. Edward Hebert School of Medicine was established by Congress as part of Public Law 92-426 in 1972, with its first class graduating in 1980. The early development of the University concentrated on USU's first academic program, the School of Medicine.

Anthony R. Curreri, M.D. was appointed as the University's first President in 1974; **Jay P. Sanford, M.D.**, joined **Dr. Curreri**, at the President's request, and was later appointed as Dean, SOM, in May of 1975. He served as Dean through 1990. The initial development of objectives for the SOM was accomplished through the combined efforts of the Board of Regents (BOR), the BOR Educational Affairs Committee, Dr. Curreri, Dr. Sanford, and special working groups. Activities used to develop these objectives included committee meetings, retreats, and consultation with a variety of experts from military medicine and civilian medical organizations and institutions. Individuals and groups consulted included: the Surgeons General of the Army, Navy and Air Force; Chiefs of the Medical Departments/Services of the Army, Navy, and Air Force; physicians from the Walter Reed Army Medical Center, the National Naval Medical Center at Bethesda, the Malcolm Grow Air Force Medical Center at Andrews Air Force Base, the Wilford Hall U.S. Air Force Medical Center, the U.S. Army Academy of Health Sciences, Sheppard Air Force Base Academy of Health Sciences, Brooke Army Medical Center, and the Armed Forces Institute of Pathology; the Secretary of the Air Force; the Secretary of the Navy; the Association of American Medical Colleges (AAMC); the American Medical Association (AMA); the Liaison Committee on Medical Education (LCME); the Department of Health, Education, and Welfare; the National Institutes of Health (NIH); George Washington University; Georgetown University; and, Howard University.

MISSION

"The USUHS shall: 4.1. Educate and train competent medical personnel qualified to serve the needs of the Uniformed Services through providing the highest quality education programs in the health sciences; 4.2. Place high priority on educating and training personnel to meet the combat and peacetime medical needs of the Armed Forces; and, 4.3. Grant applicable advanced academic degrees; establish postdoctoral and postgraduate programs, and technological institutes; conduct medical readiness training and continuing education for members of the Uniformed Services in the health professions; and prepare individuals for careers in the health professions in the Uniformed Services."

DoD Directive 5105.45, signed by **John J. Hamre, Deputy Secretary of Defense**, dated May 17, 1999, page 2.

Consistent Mission Direction. USU has a twenty-seven year history of guiding statements, mission direction, goals and tasking documents from the Congress, the Executive Office of the President, and the Department of Defense. From the words of the School of Medicine's "Founding Father," **Congressman F. Edward Hebert**, ... as he described how he first envisioned the University during the 1947 timeframe:

..." The mission of USUHS is to produce ... dedicated young officers who...will be able to mobilize and deploy rapidly ... to meet military and civilian crises...The University will provide opportunities for aspiring young military officers to attain academic recognition ..."
(the Life and Times of Congressman F. Edward Hebert, 1976, page 408)

to the 1999 mission statement quoted above from the Department of Defense ... the goals of the USU SOM have remained consistent; the SOM must provide: 1) a cadre of career-oriented physician officers who will provide leadership and continuity for Uniformed medicine; 2) unique training in combat medical care, trauma, mass casualties, medical logistics, and rapid deployment; 3) joint training in a Multiservice environment; and, 4) the opportunity for health care professionals throughout the MHS to attain academic recognition.

Strategic Planning. A formal process of strategic planning was initiated in 1991 to set priorities for the University. The process was conducted by an executive steering committee chaired by the USU President and included representation from the entire USU community. Mission and vision statements and guiding principles were completed in early 1992. Since that time, specific goals, strategies, and objectives have been established for the University, to include metrics for achieving those goals.

The SOM community has been actively involved in the development of the USU Strategic Plan, participating in the initial strategic planning training sessions during 1991 through the finalization of objectives and metrics during 1999. This multi-year process has included institutional retreats, town meetings, departmental briefings, and printed and electronic updates as a means of communicating with the SOM faculty and staff.

To ensure that the SOM's future direction is consistent with the Military Health System, the strategic planning process is guided by the current strategies and goals of the Military Health System Strategic Plan established by the Office of the Assistant Secretary of Defense for Health Affairs. The SOM Departments must show a direct relationship with USU's overall Strategic Plan when submitting their requests for future budgets. A formal process for identifying program needs and for submitting increased budget requests tied to the Strategic Plan has been established.

A School of Medicine Strategic Plan has been written and has undergone review by the Basic Science Chairs Committee, the Clinical Science Chairs Committee, and the Faculty Senate. In addition, a plan to review academic departments was developed during 1997 by the Dean, SOM. The process began in 1998, with departmental self-studies conducted by three departments: Surgery; Medical and Clinical Psychology; and, Military and Emergency Medicine. The process includes a review conducted by a team of external consultants. It is expected that SOM Departments and their programs will be reviewed on a recurring five-year cycle.

Mission Accomplishment ... SOM Graduates Provide Continuity and Leadership for Military Medicine.

Retention of SOM Alumni and Unique Training Ensures Continuity for Lessons Learned in Military Medicine.

"In Vietnam... I had no military training prior to coming in. It was a very challenging, difficult experience ... when I got there I learned how to take care of Marines myself.

I was alone. There was no place to med-evac patients, so through the night I had to keep casualties alive until we could move them during the daylight ...

The emotional experience of a young doctor who does not have the right kind of training in these kind of things has driven me to where I am today.

My whole life since that time has been dedicated to try to prepare people for combat, and USUHS has been able to train these young physicians to be far more ready than I was. They are superb in medicine. The training that they provide is far more than just the medical training. What we have here is the ability to train Army, Navy and Air Force and Public Health Service physicians from day one to work together in a joint environment. They go and they jump out of airplanes with the Army, they go with us to the Marine Corps, they go with us aboard ships at sea, and they go to the air. They do all these things together ... from day one... so they develop a joint mentality that has a value of which you cannot quantify the cost of. So, when the time came for me to select a doctor who was going to go on the Joint Task Force for Somalia, I chose a USUHS teacher, ... one who had been there, who spoke the language, who was able to do joint planning and to effectively bring the troops to Somalia. You cannot cost that out...the value of having people with this kind of training is really irreplaceable. There are many, many , many courses and experiences at USUHS that are just not duplicatable. It is a national resource. They come as leaders ... they are dedicated to stay with us for a long time... We want experienced people to stay in the military... Now that we have USUHS, we cannot give that up."

Testimony by the Surgeon General of the Navy, Hearings before the Senate Armed Services Committee, March 2, 1994, pages 35-37.

USU SOM Graduates Represent 20 Percent of the Active Duty Physicians in the MHS. During the complicated era following "right-sizing," USU has steadily provided an excellent source of career-minded physicians who are uniquely skilled in the practice of military medicine. Where Congress had envisioned a retention rate close to 70 percent, the overall retention rate for USU graduates is 91 percent; of which, some 81 percent remain on active duty after having completed their service obligation. This retention rate becomes even more significant in light of the recruitment and retention concerns currently reported by the Armed Forces.

The SOM graduates 97 percent of those who matriculate, and more than 99 percent advance to the military services' Graduate Medical Education programs. Since its first graduation in 1980, USU has granted 2,792 medical degrees; 2,497 of those graduates remain on active duty. The active duty physician force currently totals approximately 12,447 physicians (Army - 4,347; Navy - 4,000; Air Force - 4,100). The early founders had hoped that the USU graduates would equal at least 10 percent of the total physician force; currently, the USU graduates on active duty represent one out of every five physicians in the Armed Forces.

SOM Graduates Present Clinical Skills Required for MHS Residency Programs.

"USUHS is a dramatic difference in depth and degree and experience and exposure and immersion in what we call military medicine, that is not available in the civilian community. My experience has been we have uniformly superior products in the (USUHS graduates). I happened to be stationed on an Army post before I came here, with a small clinic run by a young doctor. I saw the difference between his predecessor and himself, the USUHS graduate. He hit the ground running and turned the clinic around in just a few short weeks. It made a lasting impression on me.... From the clinics to the largest Air Force hospital in this country, Wilford Hall, USUHS graduates excel... A third of the USUHS graduates at Wilford Hall are in positions of high responsibility for their grade ... I like what I see."

Testimony by the Surgeon General of the Air Force,
Hearings before the Senate Armed Services Committee,
March 2, 1994, page 37.

Evidence of the high quality of training that SOM students have received comes from many sources. The 1999 SOM Self-Study documented that "compared to students from all medical schools, a higher percentage of SOM students report they have acquired the clinical skills to begin a residency program. SOM graduates are highly recruited by military program directors. Traditionally, more than 75 percent of USU graduates receive their first choice of specialty and location for their first year of residency training; the most recent Class of 1999 received a match rate of 96 percent for their choice of specialty. Feedback obtained from residency program directors indicates that SOM graduates are consistently recognized as well-prepared to complete graduate medical training. USU students consistently pass the United States Medical Licensing Examination (USMLE) Steps 1 and 2 at rates higher than the national average; in the most recent year reported, 152 of 157 first-time takers from the Class of 2000 passed Step 1; and, 163 of 164 first-time takers from the Class of 1999 passed Step 2." (SOM Self-study, Section IV, pages 2 and 10, submitted to the LCME in 1999).

Operational Assignments, Leadership Positions, and Unique Understanding of Military Medicine Are Substantiated.

"...Do I value USUHS ? ... I value it a great deal and (consider that) it is a major asset to this country. I do value the output. I can tell you that in the Army we have a deficit of training in the type of individuals who can go into combat with a battalion. ..and I do get complaints from line officers that we very frequently have physicians in there who are not ready for that. That is never the case when a USUHS graduate fills that bill..."

Testimony by the Surgeon General of the Army,
Hearings before the Senate Armed Services Committee,
March 2, 1994, page 35.

The highly dedicated USU graduates are earning promotions at above average rates; they have become well-respected in their medical specialties, and hold significant positions of leadership in areas of military medicine ranging from special operations and hospitals, to the White House, to Kosovo deployments, and to assignments aboard ships at sea and the Blue Angels. SOM alumni are engaged in patient care or research in military hospitals and clinics around the world, administering to active duty members, retirees, and their family members. These military physicians and the thousands of other health professionals who have taken advantage of the numerous graduate and continuing education programs provided by the SOM, are living testimony to USU's mission as the Nation's federal health sciences university.

Following an inclusive review in 1995, the General Accounting Office (GAO) confirmed that **"43 out of 44 commanders of major military medical units perceived that physicians from the University have a greater overall understanding of the military, greater commitment to the military, better preparation for operational assignments, and better preparation for leadership roles."** The GAO reviewers also pointed out that they **"perceive that University graduates have a better appreciation of and greater satisfaction with the physician's role within the military"** than other accession sources (General Accounting Office Report, "Military Physicians - DoD's Medical School and Scholarship Program," September 29, 1995, page 43).

A review completed in January of 1998, documented that of the approximately 1,431 USU graduates on active duty who were eligible to hold leadership positions, and were not in a post graduate educational status, 292 were serving as chairs, chiefs or heads of departments, directors of services, or program directors in military hospitals, clinics or centers. An additional 60 USU alumni were serving in operational assignments for the three military services. These 352 USU physician alumni were holding significant leadership and/or operational positions throughout the Military Health System (MHS).

A recent review conducted in February of 1999, documented that of the first six classes of USU graduates, from 1980 through 1985, 408 alumni remain on active duty; 170 of whom (approximately 42 percent) hold senior operational or leadership positions.

The USU SOM Selection Process Ensures Exemplary Retention Rates.

"High ethical standards, the candidate's own 'internal moral compass,' compassion, honesty, and integrity should be emphasized in the selection process for candidates to become the nation's physicians ... Selection should employ MCAT scores and GPAs not as predictors of success in medical school, but as threshold measures to indicate only that applicants possess the intellectual endowment and scholastic aptitude needed to meet the academic rigors. Once candidates have satisfied those threshold requirements, we should give no further weight to academic credentials but make selections on the basis of character traits and aptitude for serving others."

Jordon Cohen, M.D., President, Association of American Medical Colleges (AAMC), in his opening speech at the 108th annual meeting of the AAMC, on November 6, 1997.

The USU SOM selection process has been identified as one of the major factors in the success of the overall retention rates of the USU alumni. There are between 15 to 18 applicants each year for each of the 165 positions in the first year class which allows an intensive selection process. All candidates are carefully screened during the interview process to determine the following: 1) already recognized sensitivity for national, public, and/or community service, that clearly has the potential for enhancement in federal service; 2) the presence of natural and adaptable leadership skills already documented in a variety of organizations and circumstances; 3) an enthusiasm for supportive care-giving directed at individuals and groups, forming the basis for involvement as a physician in the broad areas of medicine, and military medicine in particular; and, 4) a documented record of academic success that extends beyond the boundaries of any standard curriculum, as demonstrated through individual creativity, service, and/or research. A recent Matriculating Student Survey conducted by the Association of American Medical Colleges (AAMC) showed that compared to the national group of matriculants, USU SOM candidates were more likely to select medicine as a career because of the opportunity to serve the community and to lead, and less likely to seek a medical career for purposes of prestige or high income.

The SOM Committee on Admissions, faculty and student interviewers, and the SOM Office of Admissions work together to manage and implement the SOM Selection Process. The Committee on Admissions is comprised of men, women, active duty, civilian, clinical science, basic science, minority, and community representation for a total of 23 individuals. The applicant review process operates at subcommittee and full committee levels, with the initial review focusing on Medical College Admission Test (MCAT) scores and grade point averages (GPAs). The secondary review process is designed to enhance the opportunity for inviting applicants to interview. Candidates with academic records that ordinarily preclude regular review at the subcommittee level and those not invited for interview initially are reviewed by the Committee Chairman. This allows the identification of candidates who may have been overlooked and supports the SOM effort to recruit disadvantaged individuals and underrepresented minorities. Folders of all interviewed applicants are reviewed by three separate subcommittee members and are presented for full committee review if ranked above the minimum threshold. However, special consideration is extended to underrepresented minority and active duty military applicants ranked at lower levels, and these candidates are also presented to the full committee. In addition, individual committee members may bring the application of any interviewed candidate to the attention of the full committee independent of the subcommittee ranking.

The "interview day" is consistently reported as a positive experience by applicants; during the interview process, the applicants take part in various activities, to include: organized briefings; two formal interviews; lunch; a tour of the campus with students; and, informal visits with the Associate Dean for Student Affairs, the Director of Admissions, the Assistant Dean for Admissions and Academic Records, the Vice President for University Recruitment and Minority Affairs, the Assistant Dean for Clinical Sciences, faculty members, and the Commandant. Applicants are also given the opportunity to stay overnight with a student host. The selection process has continuously brought to the SOM a group of students who are academically qualified and well-motivated to practice medicine. In the history of the medical school, less than two percent of the student body has had to be disenrolled for academic reasons; this is less than half of the national average. The excellent percentage of students graduating is due to 1) a good selection process; 2) a solid educational program; and, 3) genuine concern for those students who require academic or personal assistance during their time at USU.

ACCREDITATION

Early Coordination with the Liaison Committee on Medical Education. The developmental process for establishing the initial objectives of the SOM were accomplished through the combined efforts of the founding USU President, **Anthony R. Curreri, M.D.**, the Board of Regents (BOR), the Dean, **Jay P. Sanford, M.D.**, and, special working groups. Activities used to develop these objectives included committee meetings, retreats, and consultation with a variety of experts from military medicine and civilian medical organizations and institutions. Significant among those coordinating entities was the Liaison Committee on Medical Education (LCME).

SOM Program Accreditation.

Background. The LCME accreditation process is designed to certify that medical program meets prescribed standards; and, by awarding accreditation, the LCME indicates confidence in the quality of the medical school program. The SOM received provisional accreditation from the LCME, a joint activity of the Association of American Colleges (AAMC) and the Council on Medical Education of the American Medical Association (AMA) in 1976. The SOM was fully accredited by the LCME in 1979, and has continuously maintained that status.

The SOM prepared a Self-Study during 1992 and was visited by an LCME survey team during January 11-14, 1993. On April 7, 1993, the LCME voted to continue full accreditation for seven years. The Dean was asked to submit a report to the LCME by January 1, 1995, addressing: 1) progress in curriculum reform, including decompression in the first two years; 2) the empowerment and role of the curriculum committee to review, evaluate, design, and manage the curriculum; 3) the status of filling chairs of academic departments, with special reference to the availability of space and financial resources to do so and to the energizing of education and research; and, 4) the appropriateness of enrollment size and the adequacy of clinical resources. Following the LCME request, an ongoing curriculum renewal process was initiated in June of 1993. In November of 1993, the Dean's Policy Memorandum regarding the structure and function of the curriculum committee was updated to assign responsibility to the curriculum committee in accordance with the LCME's guidance as described in Functions and Structure of a Medical School. Search committees were appointed to fill the open department chair positions. And, plans were initiated to develop third-year clerkship rotations at two additional sites. A report, submitted in December of 1994, detailed the status of progress in the four areas identified by the 1993 LCME response. The LCME accepted the report in February of 1995; and, requested an additional report by September 1, 1996, to address the following: 1) any changes in class size stemming from the downsizing of the Uniformed Services; 2) the status of continued federal support; 3) further progress in curricular management, evaluation, and reform; and, 4) the system and results of monitoring the equivalency of educational quality and the evaluation of students across sites of clinical education. The response, dated August 16, 1996, indicated that the class size had not been affected by the downsizing of the Uniformed Services; and that federal funding was sufficient to support the University's programs. Also, for the 1996-97 Academic Year, an additional ten percent reduction in contact hours for first and second year students was implemented, resulting in an additional afternoon per week of student study time. In September of 1996, the LCME accepted that report; and, no further information was requested prior to the full accreditation survey scheduled for the 1999-2000 Academic Year.

LCME Self-Study and Site Visit - 1999. Following accreditation by the LCME in April of 1993, the LCME scheduled its next review of the SOM Program for reaccreditation in November of 1999. As a precursor to that review, the Associate Dean for Medical Education coordinated an institutional Self-Study. Self-Study Committees were established during 1998, assigned topic areas, and charged to review and analyze portions of the Medical Education Database as well as other information considered relevant to their topic areas. Reports were then submitted to the Steering Committee on February 1, 1999; all reports were reviewed by both the Steering Committee and a larger LCME Task Force. All data, Self-Study reports, and the Executive Summary were submitted to the Dean during the Summer of 1999. Following the Dean's review, those materials were submitted for review to the LCME and the Survey Team Members some months prior to the Survey Team Visit. The Site Visit took place between November 14-18, 1999. Exit briefings and follow-up correspondence from the LCME suggest a very successful visit, and continued accreditation is anticipated. Official notice from the LCME is expected during April of 2000.

Additional Accrediting Entities Provide Quality Assurance. In addition to the LCME accreditation, the following professional organizations continue to authorize accreditation for the various programs and activities of the SOM: 1) the Accreditation Council for Continuing Medical Education; 2) the Council on Education for Public Health; and, 3) the American Psychological Association Committee on Accreditation. Also, SOM Steering Committees are actively involved with the accreditation process for two additional areas of responsibility reviewed by: 4) the American Association for the Accreditation of Laboratory Animal Care; and, 5) the Nuclear Regulatory Commission.

MILITARY UNIQUE CURRICULUM

"One place where the physicians of tomorrow do get thorough preparation to deal with the medical aspects of chemical and biological terrorism is at the Uniformed Services University of the Health Sciences ... This 'West Point for doctors' offers a unique grounding in military medicine, which prepares its graduates to handle real-world scenarios that most civilian doctors are ill-equipped to face, like the 1995 sarin gas attack on the Tokyo subway system ... From basic studies integrated into the pharmacology and microbiology curricula, to the extensive field operations known as 'Operation Kerkesner' and 'Operation Bushmaster,' USUHS students learn how nuclear, biological, and chemical ('NBC' for short) agents act on the human body and what to do in the event of a suspected exposure - from detection to decontamination and medical countermeasures the June 1998 issue of Military Medicine reported that only 19 percent of military physicians were confident about providing care in 'NBC' situations. The majority of those confident few - 53 percent - were USUHS graduates."

Association of American Medical Colleges, Reporter,
Volume 8, Number 3, December 1998, pages 1 and 6.

General Overview. The School of Medicine is a fully accredited medical institution which provides a year-round, four-year curriculum. This curriculum is 174 weeks in length, approximately 20 weeks longer than the average curriculum of U.S. medical schools. This expanded curriculum focuses on epidemiology, health promotion, disease prevention, tropical medicine, leadership, officership, and combat casualty field exercises. Woven throughout the students' entire course of study, these and other subjects focus directly on the unique requirements of career-oriented military physicians. The USU SOM military unique training includes **"approximately between 784 and 889 hours of initial military education and medical readiness training compared to that provided to the Health Professions Scholarship graduates whose training ranges from 50 to 132 hours, depending on the Service"** (General Accounting Office Report, "Military Physicians - DoD's Medical School and Scholarship Program," September 29, 1995, page 41).

USU represents a total military medical educational environment and acculturation process. The USU SOM provides the Military Health System (MHS) with career-oriented medical officers who possess the knowledge, skills and attitudes essential for effective deployment during joint service operations. The SOM's principal focus is on military medicine, which involves the prevention of disease and injury; health promotion; and, diagnosis and treatment by medical personnel who are integral to the military operations they support. The focus also involves the syndromes and injuries that are either rare or unknown among non-military populations. The practice of medicine in the military requires a solid background in tropical medicine and hygiene, parasitology, and the use of epidemiologic methods and preventive medicine. **The SOM, for example, provides its medical students with approximately 130 hours of study in these areas, compared to about 13 hours found in the typical civilian medical school curriculum.** Additional knowledge in such areas as military medical intelligence, psychologic stresses of combat and trauma, the medical effects of nuclear, chemical, and biological weapons, and the medical effects of extreme environments - aerospace, undersea, tropical or desert conditions - is essential to a physician's ability to properly support his/her military commander's responsibility for troop fitness. Also critical to a military physician's focus is his or her ability to provide disease prevention and health promotion under austere conditions.

First Year Curriculum.

Background. Four SOM Departments, Military and Emergency Medicine, Preventive Medicine and Biometrics, Medical History, and Psychiatry share the major responsibility at USU for teaching the military unique course material ... material that is not found in the curriculum of any other U.S. medical school. In addition to the usual first-year medical school courses, such as anatomy, physiology, biochemistry and human behavior, students at the SOM have required courses in military studies, military medical history, tropical medicine (diagnostic parasitology and medical zoology), as well as biostatistics and epidemiology, all of which utilize military data and case studies. This provides an introduction to the scope and content of military medicine and exposes each student to all of the medical systems within the Uniformed Services. Students are focused on the delivery of preventive and treatment services in the "field" or in a deployed environment.

Overview of Military Medicine. The Basic Sciences Division of the Department of Military and Emergency Medicine is responsible for teaching the military studies curriculum during the first and second years of medical school. The first course occurs during the Fall of the first year and is entitled, "Overview of Military Medicine;" it introduces the students to military medicine through lectures and small group discussions. The content of the course includes the expectations which line officers have placed on the medical corps, the distribution and classification of combat casualties, the impact of disease and nonbattle injuries on readiness, and career patterns of the military medical officer. The remainder of this course deals with the echelon system of battlefield health care and an introduction to the subjects of nuclear, biological, and chemical (NBC) warfare. During the second instructional period (Winter) of the first year, the students are certified in basic life support and learn the skills of prehospital care at the basic emergency medical technician level in a course entitled, "Combat Medical Skills." This portion of the curriculum exposes the students to the level of medical training of the basic medic and introduces, at an early time, those skills which must be built upon and expanded during subsequent medical training. "Military Applied Physiology" is presented during the third instructional period (Spring) of the first year. While this course parallels the traditional physiology course, it also reinforces the concept that was introduced during the Fall, that military medicine is a form of occupational/environmental medicine. **The physiologic responses to stressors common to the military environment such as cold, heat, radiation, dysbarism, altitude sickness, and exercise are presented in the context of their impact upon readiness.**

By the end of the first academic year, each student has completed course work and experiences considerably greater than those required by the Basic Medical Officer Course for any of the Uniformed Services. The first academic year spans 40 weeks of instruction within the SOM, one week of operational medicine, and five weeks of military medical field studies.

Operation Kerkesner.

"I just returned from a 'fantastic' morning at Quantico observing Operation Kerkesner. I had no idea that the training had reached such a high state of sophistication ... Some of my observations included the following: how integrated and well thought out the sequence and content of the training was; how those students with prior military time helped the uninitiated ones so well; how professional and competent the Marine NCO cadre was. What a powerful lesson for those students to see how the NCO Corps truly is the backbone of the force; how impressed the two Thai Army officers and Japanese Naval officer were as they observed the training. USUHS no doubt is the global benchmark model; how the students praised this experience. Not one I spoke with had a negative thing to say... "

From a Letter to the USU President dated June 25, 1999,
from **Colonel Frederick J. Erdtmann, MC, USA,**
Hospital Commander, Walter Reed Army Medical Center.

Between the first and second year, all students participate in the required five-week course, "Military Medical Field Studies (MMFS)." The MMFS course begins with instruction in military field skills: operating a radio, navigating the land in daylight and at night, using preventive medicine principles, and protecting oneself against NBC attacks. The knowledge from this block of instruction prepares the students to successfully complete a one-week leadership laboratory exercise at the Quantico Marine Corps Base. This exercise, **Operation Kerkesner** (named after a former Marine faculty member of USU), challenges the students' ability to overcome field problems through their own initiative and team work. The field exercise focuses on small unit operations in a field environment. The class of 165 students is divided into four platoons that are further divided into eight person squads. Evaluators from the Department of Military and Emergency Medicine and platoon advisors from USUHS and Quantico live with the students and accompany them in all scenarios. Student leadership is rotated to place each student in a leadership position at squad or platoon level with all attendant responsibilities. The schedule includes operational scenarios that emphasize virtually all major points covered in the Military Studies I Course. Student leaders must know the medical threats (e.g., dehydration, insect-borne disease, sanitation, injury prevention, NBC avoidance and decontamination, physical and psychological stress) they may face and demonstrate how they will control these medical problems in their units. This course initiates the student to the field skills and small unit leadership experience required for the successful completion of Operation Bushmaster during the Military Contingency Medicine Course in the fourth year. **Operation Kerkesner** has been visited by a variety of active and reserve U.S. military medical personnel and has served as a model for the Navy's Rapid Deployment Medical Force (RADMF) training program. Elements of the course have been used in Public Health Service Disaster Medical Assistance Team (DMAT) training. Foreign military medical personnel have also attended the course to gain material to enhance their own training programs (e.g., the United Kingdom, France, Israel, Japan, Singapore, Thailand, and Mexico).

Non-Medical Operational Assignments. The field exercise is followed by the final portion of Military Medical Field Studies. During this time, prior service students may elect to participate in research or to enroll in an Operational and Emergency Medicine Course that is offered by the Department. Those students without prior service experience are required to spend four weeks with an operational unit in their parent service. Students may be afloat on a Navy ship, with a Marine Battalion, with noncommissioned officers (NCOs), or with other junior officers learning the military occupational environment and developing a non-medical perspective on military medicine. Coordinators at each site report on the students performance to the Department of Military and Emergency Medicine; and, each student provides a daily log and a written report on his/her experience and lessons learned. During this same period, twenty-five to thirty-five percent of each class will elect and successfully complete, one of the following military qualification schools: Basic Airborne Training; Basic Air Assault School; Survival, Evasion, Resistance, and Escape (SERE) School Training; Underwater Operations (SCUBA); or, Expert Field Medical Badge (EFMB).

Good Medicine in Bad Places - Operational Emergency Medical Skills Course (OEMS). The Casualty Care Research Center (CCRC) is a division of the USU School of Medicine's Department of Military and Emergency Medicine. The CCRC, created in July of 1989, is staffed by military and civilian physicians and scientists from the Department of Military and Emergency Medicine. **The center provides USU medical students and other medical personnel disciplined, educational training and research experiences in combat casualty care, injury epidemiology, trauma management and other related areas.** The Operational Emergency Medical Skills Course is held seven times per year, and teaches alternative methods to traditional medical practices in an out-of-hospital setting, often under austere conditions. **USU's medical students attend the course for two weeks as part of their summer experience between the first and second years of medical school.**

Incidentally, a compact ten-day course has been developed for DoD's special operations forces. Members of the military's elite special operations entities, including the Army Special Forces, the Air Force Pararescue, the Navy SEALs, and several international special forces military members attended OEMS course sessions during 1998 and 1999. The course begins with an assessment of the general skill levels of the medics and corpsmen in attendance. The basic goals of the class are then discussed, most importantly, providing critical medical care during the first 72 hours after an incident. The course strongly emphasizes the differences between general pre-hospital care and operational medical support. Pre-hospital care usually deals with blunt trauma, rapid response times, timely evacuation and virtually unlimited resources; operational medical support is generally the opposite. It is characterized by penetrating trauma, longer evacuation times, austere environments and sparse medical supplies and equipment.

The ten-day curriculum introduces many situations unique to trauma medicine. Through studying the physiology of pain, responses to, and relief from pain, the students receive instruction in local anesthesia, nerve block, and general anesthesia. Students also learn alternative invasive techniques for major airway blockage, and circulation management. The patient assessment portion of the course covers head injury, thoracic trauma treatment and immobilization techniques, such as casting. Suturing and wound management are taught with the help of Vietnam-era videos, relating closely to the purpose of the course. The students are introduced to telemedicine and the unique contributions it may have in remote treatment scenarios. The emphasis in the course is on "hands-on" training, which according to the students, provides extremely valuable insight into the theories behind classroom lectures. According to one SEAL corpsman, "... this is the only course that SEAL corpsmen need ... compared to this, the others are all academic. This teaches us what we need in the field, not in a hospital. I think this course should

be part of all SEAL corpsmen's preparation for deployment ..." (USU Quarterly, Fall Issue, 1998, page 15). For more information on the OEMS course, see the Department of Military and Emergency Medicine Home Page at: <http://www.usuhs.mil>.

U.S. Army Expert Field Medical Badge. During the Summer of 1999, 24 SOM students competed for the U.S. Army's Expert Field Medical Badge at Fort Stewart, Georgia. USU students joined non-USU military medical members for the one week course which included intensive written and field examinations, physical fitness, survival, and emergency medical treatment tests. Other areas of the exercise evaluated were the evacuation of sick and wounded, a litter obstacle course, CPR, and a 12-mile road march carrying full field gear. The overall USU pass rate for the course was 30 percent compared to the overall pass rate of 24 percent for the total class.

Second Year Curriculum.

Extensive Hours of Preventive Medicine Training. During the second year, besides pathology, microbiology, pharmacology, ethics, human behavior, introduction to clinical medicine and physical diagnosis, students have additional hours of preventive medicine, including an introduction to operational (field) preventive medicine; health promotion in the military; physical fitness programs, policies, and implementation strategies; environmental and occupational health; and, health services administration.

The Science Base for the Practice of Medicine in the Military and Command and Staff Functions in Joint Commands. The second year course in military studies focuses on two general areas: the science base for the practice of military medicine (wound ballistics, extensive background on conventional and unconventional weapons effects, toxic hazards, and psychological stress) and the command and staff functions of military medicine in Joint Commands (medical planning, medical logistics, medical evacuation systems, and blood programs). The medical ethics course includes extensive material directly related to military medicine including the special concerns with sending soldiers back to combat, treatment of prisoners and civilians, and limitations imposed by the Geneva Conventions. Other material stresses the resolution of hospital based ethical problems in federal institutions. The second academic year spans 35 weeks of instruction within the SOM. After final examinations, students prepare for the U.S. Medical Licensing Examination (USMLE) Step 1, which is the first of three examinations in the process of becoming a licensed physician. The current second year class completed the computer-based testing (CBT) for the USMLE, Step 1, between May and June of 1999, prior to beginning their first rotation of their third year. Ninety-six percent of the USU students passed the examination on their first attempt; the national first-time pass percentage was 95 percent.

Third Year Curriculum.

Overview. The third year curriculum consists of clerkships in the principal specialties of medicine. Much of the instruction is provided by uniformed clinical faculty with an emphasis on teaching the special military relevance of the various clinical experiences. Of special note are the military clinical settings for instruction (military tertiary medical centers, military community hospitals, military outpatient ambulatory care clinics, and troop dispensaries on active military bases) and the patient population which includes active duty personnel presenting diseases and injuries incurred during both training and combat deployments.

As a part of their training and work during their clerkships, USU SOM third (and fourth year students) provide hundreds of thousands of hours of patient care related services in the MHS hospitals during each calendar year. Such services include examination of patients, providing post-operative care, organization and maintenance of the completion of the medical history and physical examinations of patients, assistance at surgery and delivery of newborns, and updating progress notes in patient records. These services, performed by USU medical students in a supervised setting, provide necessary and important support in the provision of quality medical care to the men, women, and children receiving treatment throughout the MHS.

All SOM departments are providing a clinical experience within the ambulatory setting. The ambulatory services of all departments have grown significantly within the past seven years. The Department of Medicine has taken the lead and devoted extensive resources to the planning, development, and implementation of a comprehensive ambulatory teaching experience. The department's program and its faculty have become nationally recognized for accomplishments in this area; a number of publications in peer-reviewed journals and presentations have resulted.

Clerkships Represent the Entire Spectrum of the MHS. USU medical students complete their third and fourth year clinical clerkships at 20 military hospitals, representing the entire spectrum of the Military Health System (MHS). The third year class of approximately 165 students has eight required clinical clerkship rotations of six weeks each, for a total of 1,320 third year rotations: Family Practice (six weeks); Obstetrics/Gynecology (six weeks); Pediatrics (six weeks); Psychiatry (six weeks); Internal Medicine (two, six-week sessions); and, Surgery (two, six-week sessions). Five of the USU SOM academic departments - Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, and Psychiatry - use the Walter Reed Army Medical Center and the National Naval Medical Center as major clinical instructional sites.

The University has reevaluated and updated all of the affiliation agreements with its major teaching affiliates. This has further defined the relationship between the SOM and its 20 clinical sites to assure that clear routes of communication exist and areas of mutual interest are appropriately defined and addressed. The Associate Dean for Clinical Affairs provides oversight for relationships and interactions between the SOM and its clinical teaching sites. Issues of concern from all parties can now be readily addressed as changes in the military health care delivery system are put into place.

The following teaching hospitals have established major affiliation agreements with the USU SOM: **1) U.S. Army - (9)** Walter Reed Army Medical Center, Washington, D.C.; Brooke Army Medical Center, San Antonio, Texas; Tripler Army Medical Center, Hawaii; Madigan Army Medical Center,

Tacoma, Washington; Dewitt Army Community Hospital, Fort Belvoir, Virginia; Martin Army Community Hospital, Fort Benning, Georgia; Darnall Army Community Hospital, Fort Hood, Texas; Womack Army Community Hospital, Fort Bragg, North Carolina; Eisenhower Army Medical Center, Fort Gordon, Georgia; 2) **U.S. Navy - (5)** National Naval Medical Center, Bethesda, Maryland; Naval Hospital, Portsmouth, Virginia; Naval Hospital, San Diego, California; Naval Hospital, Jacksonville, Florida; Naval Hospital, Pensacola, Florida; and, 3) **U.S. Air Force - (6)** Malcolm Grow Medical Center, Andrews Air Force Base, Maryland; Wilford Hall Medical Center, Lackland, Texas; USAF Medical Center, Wright Patterson Air Force Base, Ohio; USAF Medical Center, Keesler Air Force Base; David Grant Medical Center, Travis Air Force Base, California; and, Eglin Air Force Base, Florida.

The Department of Obstetrics and Gynecology Successfully Utilizes Video-Teleconferencing for Clinical Clerkship Evaluation and Management. A novel program utilizing video-teleconferencing for clerkship management across distant sites was piloted in 1998 and became a formalized tool in the clerkship evaluation and management processes during 1999. While a number of programs in the United States have used this technology with varying degrees of success for direct education purposes, this is the first time an academic department of Obstetrics and Gynecology has used this technology for clinical clerkship management. The very positive impact of this program was recently published in the peer-reviewed premier journal in the specialty, Obstetrics and Gynecology, and was showcased in the 2000 Faculty Development Workshop of the Association of Professors of Gynecology and Obstetrics. By utilizing video-teleconferencing three weeks after the completion of a core third year clinical clerkship, the director works face to face simultaneously with the on-site coordinators at the Tripler Army Medical Center in Hawaii; the Brooke Army Medical Center in San Antonio, Texas; the Wilford Hall U.S. Air Force Medical Center in Lackland, Texas; the Army Hospital in Fort Belvoir, Virginia; the Washington Hospital Center in Washington, D.C.; the National Naval Medical Center in Bethesda, Maryland; and, the Walter Reed Army Medical Center, in Washington, D.C. Clinical academic performances are assessed and final clerkship grades are developed for each of the students at each site to assure consistency, completeness, and fairness in the evaluation process for all students at all of the sites. The turn-around time for assignment of the final grades has been shortened by 60 percent and the process has ensured uniformity across all clerkship sites. Mid-course progress of all students currently in their clerkship experience is also reviewed. Additionally, this process has served to markedly enhance the level of communication among all of the on-site coordinators together with the clerkship director and the Department Chair.

Pediatric Clinical Rotation - Exceptional Family Member Program. Third year medical students on their pediatric clinical rotation receive a new perspective on family care; the rotation sends the students directly into the homes of parents who have children with special needs or disabilities. Every six weeks, a new group of USU students visit homes on an individual basis, integrating into the family for about two hours and learning about life with a special-needs child. **The parents are the teachers in the non-clinical, interactive environment.** USU works with the Bethesda-based Institute for Family-Centered Care to provide the training. The Institute recruits, trains, and supports parents to serve as faculty and advisors for the project. The parents develop a list of capabilities and behaviors for the students that goes beyond their basic medical knowledge. These include self-awareness, good communication, decision-making skills, and a professional attitude. .. competencies that the parents feel characterize outstanding physicians. Medical conditions of the children include seizure disorders, Downs Syndrome, cerebral palsy, cystic fibrosis, leukemia, juvenile rheumatoid arthritis, and severe multiple disabilities. The children range

in age from pre-school to adolescence. Prior to their visit, the students are assisted in forming self-directed learning goals; afterward, the students write a one-page paper about the strengths that they saw in the child and family and their own emotional reaction to the visit. The USU students are provided essential lessons about the capacity of families and the role of the physician.

Patient Simulator - A Collaborative Effort. A collaborative project between the National Naval Medical Center's Department of Anesthesiology and USU's three Departments of Anesthesiology, Anatomy and Cell Biology, and Physiology led to the development of a fully interactive medical training laboratory at USU.

The patient simulator is being used to train three primary groups at USU: medical students, graduate nurses, and anesthesia residents. **USU's medical students, during their third year anesthesia rotation, are instructed in the basic fundamentals of anesthesia and the role of the anesthesiologist in surgery.** They learn to connect a patient to external life support sources, such as an oxygen mask, a ventilator, or manual ventilation via endotracheal intubation. For the first time, USU students combine the lessons learned about the physiology of gas exchange and physiologic and pharmacologic responses while actually performing the procedures and administering anesthesia, without putting a patient, or themselves, at risk.

The simulator is designed with more than 20 patient profiles, each with unique characteristics, including cardiovascular, pulmonary, and metabolic attributes. There are more than 35 customizable "events" ranging from anaphylaxis to ventricular fibrillation which can be assigned to the simulated "patients." Instructors are able to select the type, severity, and speed of a case and tailor it to match the ability of the student; the instructor can then assess the clinical judgment, decision making, and performance levels of the student. A lesson can be "paused" to provide the instructor the opportunity to give the student feedback; and, clinical situations can be repeated until the desired level of performance is achieved.

The mannequin (simulator) can present a number of various medical problems and altered physiological states. A certain scenario may incorporate any number of characteristics and complications including difficult airway management, cardiovascular conditions, allergic reactions, problems with equipment set-up, and equipment failure. **The simulator presents scenarios applicable to combat casualty care, anesthesia, critical care, trauma, and emergency medicine.** The simulator is designed with an automatic drug recognition system, which creates a realistic response to model drug compounds administered to the mannequin. Each syringe is equipped with a unique computer chip which represents a specific drug. Drug models include intravenous and inhaled anesthetics, neuromuscular blockers, cardiovascular agents, and a wide range of infusion pharmaceuticals which affect the simulator as they would a human patient.

The SOM is now reviewing the extensive physiologic and pharmacokinetic models of the patient simulator for possible inclusion in the basic science curriculum during the first and second years of the medical program. If determined to be appropriate, the use of the simulated patient would add a clinical context to some of the physiology and pharmacology principles presented to the medical students.

The Advanced Technology Training Telepresence Surgery System. Another SOM Department that is utilizing simulation technology to present advanced training is the Department of Surgery. The Telepresence Surgery System (TeSS) has quickly gained recognition as an exciting technology training tool at USU. The remote surgery laboratory is one of the newest in USU's advanced training tools. Two USU Class of 1982 graduates on the faculty of the Department of Surgery have been working with the system since July of 1997. The remote surgery laboratory occupies two rooms at USU. One room houses the operator module, which consists of a color monitor, a liquid crystal shutter, used in conjunction with polarized glasses for stereo graphic viewing, a mirror to create a virtual work space beneath the hand-operated master controller, stereo speakers, and surgical instrument handles. The second room contains the remote, or surgical manipulator; the unit is comprised of two color CCD video cameras. This allows for interaction between the instructor and the students, or, for between the surgeon and the patient. The system's "arms" are controlled by small motors attached to each axis by gears, timing belts, and cables. The ends of the arms are equipped with interchangeable surgical instrument tips, providing force feedback which can be adjusted accordingly to represent the sensitivity of particular cases. As in flight simulator training, surgical simulation technology allows for proficiency testing in individuals. With the requirement for high levels of realism and sophisticated visual, audio, and motion-based systems, the simulators can be used to rehearse, train, and develop new surgical procedures.

The TeSS has two clear uses, patient care, both local and remote, and surgical education. Current techniques, including laparoscopy and endoscopy, already place the physician at a distance from the operative area, using scopes, catheters, and video monitors for the remote manipulation of surgical instruments. Currently, the system is primarily used for surgical education at USU. **Third year medical students are introduced to the system as part of the surgical skills course curriculum.** The students perform as a surgical team in a "remote" environment. This simulation training provides a safe environment where students can rehearse and train in unique scenarios, without endangering themselves or patients. Although it may be some time before USU graduates see the use of remote surgery under deployed conditions, they can expect to see its impact in the operating room in the near future. **This remote surgery project, which has received regional, national, and international media exposure, provides USU students an additional aspect of advanced training NOT available at other medical schools.**

Fourth Year Curriculum.

"Yours is the only medical school in America that trains physicians to be ready for duty on the bottom of the ocean or on the surface of the Moon, and any place in between ... As students, you went through one of the most rigorous programs in the country... You prepared yourself to treat patients anywhere in the world, under any circumstances."

President Ronald Reagan, Commencement Address,
SOM Class of 1987.

Overview. The fourth academic year begins with a one week Military Preventive Medicine Course. Early in the fourth year, approximately 165 students also take the USMLE Step 2. The 165 fourth year students have ten four-week blocks for 1,650 rotations. Students must complete an eight week subinternship as well as the following four-week clerkships: Military Contingency Medicine, Military Emergency Medicine, and Neurology. The senior year concludes with a one-week Transition to Residency Course.

Operation Bushmaster. In the fourth year, the Military Medicine Course places students in a simulated Joint Task Force where they participate as the medical staff for each of the component commands (Army, Navy, Air Force, and Marine Corps). This scenario is carried into the four-week Military Contingency Medicine Course which focuses on medical support at first and second echelon levels (prehospital) for military forces deployed on combat, peacekeeping, or humanitarian assistance operations. Included is a five-day, continuous operations field exercise, **Operation Bushmaster**, where students operate battalion aid stations and a medical company under simulated combat conditions while receiving multiple evaluations of medical unit leadership, preventive medicine and patient care, medical planning, and administrative and logistical skills.

Implementation of Deployable Telemedicine at Bushmaster and the Casualty Care Research Center. During the September 1998 offering of Operation Bushmaster, the course curriculum incorporated deployable telemedicine for the first time; this was continued during 1999. **All fourth-year medical students are now fully trained in the use of deployable telemedicine.** The four-day course (geared toward currently deployed telemedicine system users, fixed-site consultants, the telemedicine industry, and more recently, Army Surgeon General-mandated Medical Center Special Response Teams) teaches system design, equipment options, and hands-on training, in addition to clinical applications, clinical techniques case studies, and tissue labs.

One technique included in the practice of telemedicine involves obtaining a digital image of a wound, lesion, or other suspicious medical condition and down-loading the still digital image, through a "store and forward" concept. The image is then sent to the appropriate medical care provider via E-mail. In a matter of minutes, a specialist can make a diagnosis and send back the recommended treatment, which can then be provided before evacuating the person from the remote location (and, in some cases, eliminate the need for evacuation).

The Casualty Care Research Center (CCRC), a division of the School of Medicine's Department of Military and Emergency Medicine, has taken significant strides in the field of telemedicine. Three years ago, prior to the deployment of American Forces to Bosnia, telemedicine became a significant part of Army Medicine. Personnel from CCRC and Fort Dietrick, Maryland, developed the concept of deployable telemedicine for the United Nations missions in Macedonia. Soldiers from Fort Dietrick expanded the effort by going into Bosnia with NATO forces to lay the groundwork for communication between the 212th MASH, the primary medical treatment facility for the American sector in Bosnia, and the combat support hospital in Hungary. At the same time, the staff of CCRC was at USU instructing all units that would be deployed to Bosnia and Macedonia. USU CCRC staff taught the clinical applications, techniques, and the medical and legal aspects of telemedicine practice issues. **The USU CCRC serves as an essential clinical and technical telemedicine training organization within the Department of Defense; and, the fourth year medical students receive unique readiness training and experience as a result.**

Telemedicine has also been introduced aboard the USS George Washington by the CCRC staff. As a result, the Navy has significantly increased its use of the telemedicine equipment. In conjunction with the National Naval Medical Center (NNMC), the CCRC, and other DoD agencies, the dermatology field has seen an overwhelming number of cases; more the 90 teledermatology cases have come from the USS George Washington. During early 1998, CCRC staff diagnosed four cases of melanoma using telemedicine. In one case, they were able to diagnose and recommend a simple curative surgery on board; the patient received immediate care and was saved from unnecessary testing. The Navy was saved the expense of evacuation and the loss of a crucial member of the shipboard team. A region-wide system, under development, will tie in the NNMC, the Walter Reed Army Medical Center (WRAMC), and USU's Department of Dermatology. The system will be open to accept consults from all three locations.

To date, the USU CCRC staff has trained more than 400 personnel in the usage of telemedicine. They have taken the technology to Belize, Germany, Macedonia, Croatia, Bosnia, Saudi Arabia, and Ethiopia, where the Department of Defense was able to develop less costly and more portable systems through funding from the private industry. Telemedicine, in conjunction with NNMC and WRAMC, supports 11 medical treatment facilities and 32 outlying clinics, as well as the MHS forces deployed around the world.

Operation Bold Eagle. Operation Bold Eagle is a week-long, one-credit course in Military Preventive Medicine that is conducted early during the fourth year of medical school. In one week, it reviews what USU students have learned in their first and second year medical school classes, and prepares the students for applying their knowledge and skills in a realistic field environment. The exercise is staffed by military personnel from the Army, Navy, and Air Force in the Washington, D.C. area. who play the roles of medical and line commanders on the battlefield.

The course is comprised of three basic components. The first is a review of basic principles of preventive medicine, disease surveillance, and some of the relevant diseases. The course is dynamic and certain diseases or conditions dealing with preventive medicine will be continuously added or deleted. Only the most operationally relevant information will be included. The second component of the course is to provide experience with disease non-battle injury (DNBI) assessment and reporting. Following the Joint Chief of Staff (JCS) instructions, the medical students are provided a scenario and corresponding sick-call log books. With this information, they must calculate the DNBI rates and make assessments and recommendations based on their findings as to the problems that they encountered. This, in turn, provides

them with part of the material required to complete the third component of the course, which is preparing and presenting briefs to the senior officers. The briefs include: a five-minute Medical Threat Assessment Brief with recommendations for the area of operations of their respective scenarios; and, after completing the DNBI assessment, a DNBI Brief lasting not more than ten minutes, must be presented to a senior line officer on the problems, recommendations and solutions to reduce the DNBI associated with their scenarios. The course contains approximately 11 hours of lecture, ten hours of laboratory (scenarios, DNBI calculations and briefings), and three hours for a final examination and administrative subjects. **The course is military unique in that it deals with military-based problems and teaches medical students how to make assessments of medical problems not common to civilian practice, and how to properly prepare and present briefings to senior officers.**

USU SOM Requires an Emergency Medicine Clerkship. Military Emergency Medicine, one of the few required four-week emergency medicine clerkships found in all American medical schools, provides opportunities to utilize the skills in Basic Life Support (BLS), Advanced Cardiac Life Support (ACLS), and Advanced Trauma Life Support (ATLS) developed in the USU SOM Military Contingency Medicine Course. **The USU SOM is the only U.S. medical school which requires these courses for all of its students.**

A recent addition to the American Heart Association and Red Cross BLS curricula is the automated external defibrillator. Advances in computer software and hardware have enabled the defibrillator industry to construct totally automated defibrillation capabilities for use during deployment. ACLS involves the identification of cardiac rhythm abnormalities, with guidelines for pharmacological and electrical interventions. ACLS training emphasizes the leadership skills needed to successfully perform resuscitation. The USU student must coordinate a team of individuals, provide cardiac rhythm interpretation, oversee BLS, administer the correct dose of medications, and provide shocks at appropriate energy levels. Another training technology available to the USU medical students is the Actronic Machine. This resource is available in the USU Learning Resource Center and provides real-time, hands-on training and testing for BLS, including mannequins directly linked to a computer. The machine also provides training and practice for such ACLS disciplines as megacode (during which the student manages the first ten minutes of a cardiac resuscitation), rhythm recognition, heart and lung sounds recognition, and pharmacology and algorithm for ACLS reviews. Operated through a personal computer, this integrated system uses both laser disk and CD-ROM resources to provide real-time scenarios with realistic feedback.

Within the fourth year elective program, there are numerous opportunities for international experiences in both civilian and military institutions, attendance at U.S. Army and U.S. Air Force aviation medicine courses, and assignments to operational military units or military medical research activities in Asia, South America and Africa as well as with medical services of other countries such as Australia and New Zealand. The Associate Dean for Clinical Affairs coordinates the international relationships.

USU SOM Curriculum Stresses a Military Focus. In addition to the military unique curriculum described above, the USU SOM academic departments and faculty have structured **all of their courses to include: topics specific to military medicine and not covered in the traditional medical school curriculum; and, teaching examples and cases drawn from military medicine.** This content focus is

reinforced by the fact that many of the faculty (one third of the billeted basic science faculty and two-thirds of the clinical faculty) are uniformed officers representing the Army, Navy, Air Force, and the Public Health Service; these uniformed instructors provide experience and contextual correlations during their teaching of traditional topics. **The practice of medicine in the military is woven throughout the four years of medical school.**

Curriculum Renewal.

Background. The SOM curriculum utilizes a variety of educational experiences and learning formats, including lecture, laboratory, clinical correlation, small group discussion, computer and web-based experiences, patient simulator, standardized patients, and experiential exercises. The SOM vision for the undergraduate curriculum is that the science of today is taught in an environment that will foster increased long-term, self-directed learning tomorrow. Toward this end, the SOM Curriculum Committee has completed an exhaustive study of the undergraduate curriculum and revisions are underway to minimize the traditional curricular "stovepipes" through course integration and the increased use of clinical material.

In both the first and second years, there is a heavy emphasis on small group learning. In the first year, this takes the form of laboratories in Anatomy and Physiology and discussion groups in Human Context. Additionally, the Introduction to Clinical Medicine Course starts in the first year and begins to develop history-taking and physical diagnosis skills. In the second year, laboratories continue in Pathology and Microbiology, while there is increased use of a small group problem-based learning educational format. In both Pathology and Clinical Concepts, groups of 8 to 12 students team with a faculty member to review clinical scenarios. The format of these encounters is designed to flow seamlessly into the second year portion of the Introduction to Clinical Medicine Course and the clerkships during the third year.

The Renewal Process. As the Chief Academic Officer of the SOM, the Dean is responsible for institutionalized curriculum management. Policy issues are reviewed and considered by a standing Curriculum Committee, which reports to the Dean. Institutionalized curriculum renewal in the SOM has been a high priority in recent years. The formalized process began with Phase I (1993-1995) of curriculum renewal. During Phase I, a steering committee with four subcommittees was developed to cover the following areas: 1) the history of medical education in the United States; 2) current experiments in curriculum reform; 3) curriculum reform at the USUHS SOM; and, 4) professional requirements and outcomes. Subcommittee reports and recommendations were generated and followed by a faculty review. The Dean's Office and academic departments then offered recommendations on how to best implement the committee's recommendations.

During Phase II (1996-1997), a steering committee and five subcommittees were established to review or complete the following: 1) objectives and goals; 2) an organizational template for curriculum management; 3) basic science and intra-departmental and clinical integration; 4) outcomes and evaluations of the clinical clerkships, both required and elective; 5) the establishment of topic groups; 6) subcommittee and topic group reports and recommendations; 7) a consensus on the recommendations and implementation

planning; and, 8) the implementation process. In February of 1998, the Dean charged the Curriculum Committee with reviewing the December 1997 Curriculum Review Report produced during the Phase II of curriculum renewal and the development of an implementation plan for curriculum renewal. This implementation plan is envisioned as an evolutionary process, with changes in the curriculum occurring in an incremental fashion. The Curriculum Committee completed a draft of SOM educational objectives, which was reviewed by the Dean and distributed to faculty, students, and staff for comment, and finalized in 1998. The current draft of the curriculum renewal implementation plan includes five major areas of focus: 1) development of educational objectives; 2) content coordination, integration, and presentation; 3) computers in education; 4) outcome measures; and, 5) faculty development. In order to facilitate this intensive process and to diminish the natural anxiety which results from change, the Dean held town meetings, directed the establishment of a web site for the distribution of information and discussion of issues, involved representatives from all academic departments, established topic groups to review curriculum content, and directed student involvement at all levels. As changes to the curriculum occur, the Dean has also directed that his office establish and monitor processes for student, faculty, and TriService evaluation of the curriculum changes.

There are numerous examples of clinical medicine being integrated into the basic science experience. Close collaboration between the Departments of Radiology and Anatomy led to the development of computer-based learning resources correlating basic anatomy with the radiological representation of normal and pathologic states. The Medical Physiology Course (which is closely integrated with Anatomy) has a long-established tradition of incorporating clinical faculty into the course. Several areas in particular - cardiovascular, renal, and pulmonary - have demonstrated extensive clinical integration for many years. As part of the current phase (Phase III) of curriculum renewal, all course and clerkship directors have been asked to review the current SOM objectives and to establish consistency between objectives at the individual course/clerkship level and the institutional level. A master grid has been developed by the standing Curriculum Committee to facilitate the review of the curriculum for any gaps in content and to determine the adequacy of methods for assessment of student performance. Educational objectives have been used to revise the military medicine portions of the curriculum, and to guide the coordination of topics in the Anatomy and Physiology courses. Currently, there are also several initiatives being considered to move more basic science to the clinical years. One example is the proposal before the Curriculum Committee to develop a computer or web-based curriculum of key basic science topics for exploration in the fourth year. The paradigm being considered is eight to ten different blocks of instruction which students would complete as self-study during the fourth year. A second curricular change under consideration is moving the Clinical Pharmacology Course to the fourth year - when many students have expressed a view that a clinically oriented pharmacology review would be very beneficial.

Departmental Review. A plan to review academic departments was developed during 1997. A proposed policy memorandum in 1998 established a mechanism for an internal review process by the individual SOM departments. The internal review process will be conducted approximately every five years, or when there is a change in chair status. The benefits derived from periodic departmental reviews are many: confirmation and/or assurance that the SOM's strategic goals are being met; documentation that the departmental education, research, and service goals are accomplished; enhancement or revision of the department's program in an effort to meet specific goals and standards; and, the information can be used to respond to inquiries from accrediting bodies such as the LCME and the Middle States Association. The draft proposal was distributed for review and comment. Coordination of the process

continued throughout 1999, with departmental self-studies being conducted by three departments (Surgery, Medical and Clinical Psychology, and Military and Emergency Medicine). The process will include a review conducted by a team of external consultants who will be funded by the Office of the Dean. During November of 1999, the Department of Surgery completed its internal review; it was followed by an external review.

STUDENT AFFAIRS

Class of 2003. During August of 1999, the School of Medicine matriculated its twenty-fourth class (the Class of 2003). 2,452 applicants representing all 50 states competed for 165 positions. There were 15 applicants for each position which allowed a diverse and highly qualified selection of candidates with a motivation toward public service. The Class of 2003 includes 63 Army; 51 Navy; and, 51 Air Force students. The demographics of the class are depicted as follows:

Seventy-three students (44 percent) were associated in some way with the military before USU matriculation. Of those,

Twenty-nine students served previously on active duty in the military. Seventeen served as officers (of which 5 came from the Academies: Naval Academy - 3; West Point - 1; and, the Air Force Academy - 1). Twelve had previously served as enlisted.

Thirty-nine students came directly from the commissioning programs: Naval Academy - 10; West Point - 5; Air Force Academy - 4; and, the Reserve Officer Training Corps (ROTC) - 20.

Forty-three students (26 percent) are women.

35 class members (21 percent) are minority students (including 14 students from groups classified as underrepresented in U.S. Medicine).

The average age of the entrants at the time of application was 23.5 years.

The matriculants had a cumulative grade point average of 3.53 and a mean science grade point average of 3.47 which compared well with the 1999 national applicant pool average scores of 3.58 and 3.53. The average Medical College Admission Test (MCAT) scores for the USU class were 10.2 as compared to the average national matriculant score of 9.9 (the MCAT consists of four sections: verbal reasoning, physical sciences, biological sciences, and a writing sample). All members of the Class of 2003 hold Baccalaureate Degrees; nine hold Master of Science Degrees; one holds a Doctor of Philosophy in Physiology earned at USU; one holds a Doctor of Philosophy in Chemistry; and, one is a Doctor of Optometry. Thirty percent of the matriculants majored in biology; 13 percent in chemistry; 12 percent in biochemistry; and, 4 percent in zoology. Some of the other disciplines in which the Class of 2003 hold degrees are music, nutrition, political science, physics, microbiology, economics, and humanities.

The Office of Student Affairs. Throughout Fiscal Year 1999, the Office of Student Affairs (OSA) was engaged in personal and/or professional academic counseling and career guidance for the 660 students in the SOM. Beginning in September of each year, OSA conducts well over 300 formal interviews. This process begins formally with the post-matriculation interviews of all 165 freshmen during the first year class.

Structured Interviews for the First Year Class. The purpose of the MS-I (medical student-first year) interview is to engage each new medical student in a relationship with the OSA and the office staff who will manage their professional development and career guidance. The interview is open with an emphasis on the future partnership (or the individual management and consulting network) that will exist between each student and the three deans in OSA. The interview covers five areas: 1) Transition - the move to Washington, e.g., housing, getting settled, family issues; 2) Sense of Membership in the Class, e.g., within and between services, professional, social; 3) Sense of Professional Vision, e.g., vision for what will come after medical school; 4) Adjustment to Student Life, e.g., how are they managing the 24 hour clock; 5) Inquiry about Image, e.g., aside from roles of student, spouse, parent, athlete, what really defines them? Students are free to raise any questions, concerns, or thoughts. The interviews require considerable time, but have definitely proven to be worth the effort for both students and OSA. These interviews set the stage for an on-going dialogue with each student over the four years of medical school and for establishing a sense of community throughout the student body.

Sponsor Program. In February of 1999, OSA allocated sponsor assignments for the newly accepted students in the Class of 2003. Upon acceptance to USU, members of the incoming class are individually matched with members of the current freshman class. First-year students serve as the incoming students' sponsors; the student sponsor answers questions about housing, moving to Washington, family issues, military summer training, and many other topics. The student-sponsor relationship has proven to be a valuable tool in assisting the incoming students through matriculation.

USMLE Step 1 Preparation. During Fiscal Year 1999, OSA prepared the second year students for the United States Medical Licensing Examination (USMLE) Step 1 Board Examination which the students took between May and June 1999, prior to beginning their first of the third-year rotations. In 1999, the USMLE introduced computer-based testing for the Step 1 and 2 examinations. The Step 1 examination was administered at Sylvan Testing Centers beginning in April and continued through the end of the calendar year. OSA provided class-wide presentations covering the fundamentals of the examination process, test preparation strategies, and test taking skills. Students also organized their own informal program which included mini-lectures on broad relevant topics, meetings with select faculty, and group study sessions. OSA was pleased with the first-time pass percentage of 96 percent (the national first-time pass percentage was 95 percent) and with those students who scored exceptionally high. Variability in scores increased, as would be expected when reducing the number of questions by half and introducing a new testing format.

Third-Year Clerkship Scheduling. Also during the February timeframe, OSA met with the second-year students to schedule their third-year clerkships. To increase student input into the orchestration of their third-year clerkship schedule, OSA moved from a system where students were simply given a pre-selected schedule of randomly assigned clerkships. **The student now has the ability to place rotations of special interest in the first half of his/her junior year and the opportunity to experience potential career choices at an early point.** In addition, the current system allows students to coordinate some of the required travel in their academic third year with personal events that may already be planned or anticipated. The staff of OSA conducted Round 1 clerkship selections for the Class of 2001 using randomly assigned numbers. During the second week of February, students met as a group and picked rotations for the remaining rounds. The students shared equally in opportunities for assignments of choice and expressed their appreciation for the process.

Graduate Medical Education Planning Interviews. OSA conducts interviews with the third-year medical students during the fall term. During the first few months of 1999, OSA met individually with the entire junior class to conduct fourth-year planning. The hour-long meetings covered Graduate Medical Education (GME) planning, specialty choice, interviews, and specific sequencing of senior rotations to maximize selection for their residency of choice; again, available selections for senior-year rotations exceeded the general expectations of the students. OSA arranged program schedules that enhanced student growth, professional experience, and individual preferences. A major product of this process is the Dean's Letter, which presents a comprehensive picture of each student's strengths. Selection for GME positions is competitive; OSA and students worked together to create the best nomination packages possible.

Graduate Medical Education Selection Board. The TriService Selection Board convened during the week of November 30, 1998 through December 4, 1998; and, 161 USUHS seniors (the Class of 1999) were selected for PGY-1 positions: Army - 61; Navy - 50; Air Force - 50. **The overall selection rate for FIRST CHOICE programs was 88 percent; USU had 142 out of 161 students match for first choice both in specialty and training site.** Twelve additional students of the Class of 1999 received their first choice in specialty, resulting in 96 percent (154 out of 161) receiving their first choice in specialty. Approximately half of the class (48 percent) was selected for training in primary care specialties; 78 seniors began residency training during the summer in the following areas: Family Medicine - 28; Internal Medicine - 23; Pediatrics - 18; and, Obstetrics and Gynecology - 9. **The directors of the MHS military programs once again demonstrated confidence in the USU graduates as 96 percent were selected for PGY-1 training at their first choice of specialty.**

The USU Military Medical Student Association. The Military Medical Student Association (MMSA), a quad-service, student-run organization, originated at USU more than ten years ago. MMSA's goals include developing lines of communication among military medical students nationwide, providing information, and promoting morale and unity among future military medical officers.

Unlike USU medical Students, the Health Professions Scholarship Program (HPSP) students attend universities in the civilian sector, receive free tuition and books, and are paid a monthly stipend while working toward their medical degrees. They receive limited military training and influence while attending the civilian schools. To share their unique military training, MMSA has sponsored conferences where residency directors and medical specialty representatives from around the country, and USU staff and faculty members present lectures and hold discussions on various topics, including service specific issues, military medical history, operational considerations of military medicine, and basic military concerns that affect both USU and HPSP medical students. The USU MMSA has also established the MMSA Journal with a goal to ultimately send copies of the journal to all HPSP students.

ACHIEVEMENTS OF THE SOM ALUMNI

"... I deployed to the Gulf very early, August 11, 1990, as a senior medical officer with the Air Force Special Operations Command. Deployed in this capacity, my responsibilities ranged from flying training and combat support missions to representing my command at theater-level planning conferences...

The heat in August was incredible, with temperatures up to 125 degrees. Yet our maintenance personnel had to work around the clock to get our aircraft combat ready. Just sleeping six hours in the heat caused dehydration to the point of dizziness. Our medical team was on the flight line and around our tent-city bringing sunscreen and ice water to the personnel because they could not drink 100 degree water out of a canteen.

My training at USUHS had prepared me for working in austere conditions without fixed facilities. The tap water in our camp became contaminated by the sewer system, and water tanks had to be provided with chlorine levels monitored daily. Because of the military medical history classes I had at USUHS, I knew that disease and non-battle injuries could make an army ineffective before the battle began. Preventive medicine is an entire department and course of study at USUHS. I had the training and references...to avoid repeating the mistakes of previous wars... Because of the emphasis on tropical medicine at USUHS, I was able to advise the Commander and troops about potential infections and how to protect themselves...Because we studied the air evacuation system and did practice exercises using it at USUHS, I was able to coordinate a unique mini-mobile aeromedical staging facility at our intermediate operating base. This provided the transition from our helicopter rescue aircraft to the C-130 medical evacuation system.

... As our troop build-up progressed, hospitals from each Service increased. Because at USUHS I had been taught the organization of medical systems in the other Services, I was able to arrange referrals for our patients much more easily ... We had no logisticians, but were able to obtain supplies through the Army depot system which I also learned about at USUHS.

Another area of major concern for our personnel was chemical warfare. Because of the thorough preparation and field training I had as a student at USUHS, I was able to develop a training program in unconventional warfare, such as chemical and biological threats, that increased confidence and decreased anxiety in our troops ...

When we deployed to our forward locations, there were no designated disaster preparedness personnel. The USUHS experience came in handy again, as I assumed those responsibilities. A plan for decontaminating aircraft, vehicles, and personnel was created. Materials were purchased and positioned to maximize readiness.

To summarize the impact of the 4-year immersion in military medicine at USUHS on my preparation for war, I appreciated the operational mission of my unit and how I, as a medical officer, fit into the process of planning and executing that mission. This went well beyond treating patients. It involved analyzing the tactical situation, advising the Commander, and integrating with other Services. USUHS graduates were well prepared.

Testimony by **Lieutenant Colonel Charles Beadling, USAF (USU Class of 1984, currently at the Rank of 0-6,)**, Hearings before the Senate Appropriations Sub-Committee on Defense, April 14, 1994, page 95.

General Overview. The graduating Class of 1999 was the twentieth class to receive Medical Degrees from USU. Of the total 2,792 medical school graduates, 2,497 remain on active duty in the Uniformed Services and represent over 20 percent of the total physician force in the Department of Defense - some 12,447 physicians. USU graduates have a seven-year obligation that only begins after they complete their three-plus years of residency training. This obligation is exclusive of any other service obligations they may have already incurred, such as graduation from one of the Service Academies. After 20 graduations, data is now available to document that the, USU SOM graduates are meeting, or surpassing, the goals established by the founders of USU. Since the first graduation in 1980, the overall retention rate for USU graduates is 91 percent; the retention rate for those USU physician alumni who have completed their initial service obligations and could leave active duty service is 81 percent (Congress had originally envisioned retention rates close to 70 percent). The average USU physician graduate serves at least 18.5 years. In just a short timeframe, USU graduates have become well respected in their medical specialties, and have become the core leadership in areas of military medicine ranging from special operations and hospitals, to the White House and Kosovo deployments, and to assignments aboard ships at sea and the Blue Angels. Other alumni are engaged in patient care or research in military hospitals and clinics around the world, administering to active duty officers and enlisted personnel, retirees, and family members. Currently, 12 of the 16 Specialty Consultants to the Air Force Surgeon General are USU graduates. USU graduates are, and continue to provide, a strong cadre of leaders who ensure the continuity of military medicine.

USU Alumni Earn Promotions to 0-6.

USU Army Graduates Selected for Promotion to Colonel - 1999.

Army graduates of the SOM have been selected for promotion to Colonel at almost twice the rate of their service peers. Nineteen USU graduates were selected for the 1999 Army Colonel Promotion list. Two of those alumni are assigned to USU: **Lieutenant Colonel David Burris, Class of 1982, Chief, Division of Surgical Research, Department of Surgery;** and, **Lieutenant Colonel Christoph Kaufmann, Class of 1982, Chief, Division of Trauma and Combat Surgery, Department of Surgery.** The 19 alumni represent USU Classes from 1981 through 1987. Overall, USU alumni had a selection rate of 59 percent (19 of 32) compared to 30 percent (43 of 143) for non-USU graduates.

Additionally, two of the three Lieutenant Colonels selected for below-the-zone promotion to Colonel were USU graduates. Both officers, **Lieutenant Colonel John Powell (Class of 1987)** and **Lieutenant Colonel Steven Swann (Class of 1986)**, were selected double-below-the-zone. Therefore, the total of USU graduates promoted to O-6 during 1999 was twenty-one.

USU Navy Captain Promotion Selectees - 1999.

The Navy released the promotion list for Captain (O-6), Medical Corps in early 1999. Again, USU graduates were selected at a rate higher than their peers. Ninety-two percent of the USU graduates considered for promotion to O-6, in zone, were selected, compared to 61 percent for non-USU graduates. In all, fourteen USU alumni were selected for promotion to Captain, U.S. Navy, during Fiscal Year 1999. These alumni represent the USU Classes from 1983 through 1987.

USU Air Force Graduates Selected for Promotion to Colonel - 1999.

Eighty-five percent of the USU graduates considered for promotion to U.S. Air Force Colonel were selected, compared to 63 percent for non-USU graduates. Three of the selectees, **Lieutenant Colonels John Baxter (Class of 1989), Peter Demitry (Class of 1986), and Byron Hepburn (Class of 1987)**, were selected **double** below-the-zone. The 14 USU alumni selected for promotion to Colonel represent the USU Classes from 1982 through 1989.

U.S. Public Health Service Graduates Selected for Promotion to Captain - 1999.

The U.S. Public Health Service promoted five USU graduates to Captain during Fiscal Year 1999. Those five USU alumni represent the Classes of 1981, 1982, 1983, and 1984.

USU SOM Graduates Hold Leadership Roles and Earn Special Recognition throughout the Uniformed Services - Selected Examples from the USU Classes of 1980 through 1999.

Class of 1980.

Colonel Benjamin Chacko, MC, USA, is the Ophthalmology Residency Program Director at the Brooke Army Medical Center, Fort Sam Houston, Texas.

Colonel Cass Conaway, MC, USA, is the Commander of the 41st Combat Support Hospital. Colonel Conaway, based on his medic's experiences at Ben Taub General in Houston, Texas, plans on sending 12 teams a year for continued training in hands-on combat care at Ben Taub.

Colonel Timothy Georgelas, USAF, MC, was appointed the Radiology Consultant to the Air Force Surgeon General and is currently serving as the Chairman, Department of Radiology, 10th Medical Group, at the U.S. Air Force Academy in Colorado.

Colonel Howard Heiman, MC, USA, is the Neonatology Consultant to the Army Surgeon General, and Staff Neonatologist at the Wilford Hall USAF Medical Center at Lackland Air Force Base, Texas.

Captain Neil Makela, USPHS, is the Chief Medical Officer at Headquarters, U.S. Coast Guard in Washington, D.C.

Captain Sandra Yerkes, MC, USN, received the Nancy C. A. Roske Certificate for Excellence in Medical Student Education, which is annually given by the American Psychiatric Association (APA). The Certificate recognizes outstanding and on-going contributions made by a member of the faculty. Captain Yerkes, who is Chief of Inpatient Psychiatry at Walter Reed Army Medical Center, received the award at the APA annual meeting in Washington, D.C.

Class of 1981.

Colonel Bill Fox, MC, USA, assumed command of the 30th Medical Brigade in Heidelberg, Germany, in July 1999. He is the first USU graduate to command an Army Medical Department Brigade. Colonel Fox was previously the Commander of the Army Hospital at Fort Polk, Louisiana.

Captain Frank Hall, MC, USN, is the Director of Ancillary Services for the Naval Medical Center, San Diego, California.

Colonel Michael Lischak, USAF, MC, is the Commander of the 56th Medical Group, Luke Air Force Base, Arizona.

Captain E. Connie Mariano, MC, USN, serves as a White House Physician, where she directs the White House Medical Unit. Her staff includes 20 personnel, including five military physicians (of which the majority are USU graduates). Captain Mariano provides direct care to **President Clinton**. As reported in the Washington Times, on August 17, 1999, Captain Mariano must remain out of close proximity with the President so that if he is injured she can respond. As soon as she steps off Air Force One, she moves away, placing herself between the President and the door or waiting transport. She carries emergency equipment with her and works closely with the Secret Service.

Captain David Wade, MC, USN, is the Director of Clinical Services for the National Naval Medical Center, Bethesda, Maryland.

Class of 1982.

Lieutenant Colonel (P) David Burns, MC, USA, Assistant Professor, USU Department of Surgery, and Chief, Division of Surgical Research at USU, received the 1999 Baron Dominique Jean Larrey Award for Excellence in Military Surgery. The award is presented in recognition of the military surgeon who has made outstanding contributions to military surgery.

Colonel Don Daniels, MC, USA, is Chief of Anesthesia and Operative Services at the Brooke Army Medical Center, Fort Sam Houston, Texas.

Captain Mark Horton, USPHS, was named the Indian Health Service's Physician of the Year. He is Chief of the Eye, Ear, Nose and Throat Department at the Phoenix Indian Medical Center, Arizona. Captain Horton spends about 40 percent of his time practicing ophthalmology at Indian reservations in the Phoenix area.

Colonel Philip LaKier, USAF, MC, is the Commander of the 319th Medical Group, Grand Forks Air Force Base, North Dakota.

Captain David Munter, MC, USN, is Chairman of the Department of Emergency Medicine at the Naval Medical Center, Portsmouth, Virginia. CAPT Munter is also the Emergency Medicine Specialty Leader for the Navy Surgeon General.

Lieutenant Colonel Don Skillman, MC, USA, is the Director of the Internal Medicine Residency Program, Department of Medicine, William Beaumont Army Medical Center, El Paso, Texas.

Colonel Paul Ziaya, USAF, MC, is the Commander of the 59th Aeromedical and Dental Group, Lackland Air Force Base, Texas.

Class of 1983.

Lieutenant Colonel Yvonne Andejas, MC, USA, is the Consultant in Radiation Oncology to the Army Surgeon General. LTC Andejas is assigned to the Walter Reed Army Medical Center in Washington, D.C.

Colonel Paul Glowienka, USAF, MC, is the Director of the Internal Medicine Residency Program at the 74th Medical Group, Wright-Patterson Air Force Base, Ohio.

Commander Pat Lappert, MC, USN, is Chief of the Department of Plastic Surgery at the Naval Medical Center in Portsmouth, Virginia.

Lieutenant Colonel Michael Spatz, USAF, MC, is the Family Practice Consultant to the Air Force Surgeon General at the Bolling Air Force Base, Washington, D.C.

Colonel Steve Waller, USAF, MC, is Chairman of the Department of Ophthalmology, Wilford Hall USAF Medical Center, Lackland Air Force Base, Texas.

Colonel Jane Ward, USAF, MC, is the Chief of Humanitarian and Civic Assistance Services at the 59th Medical Wing, Lackland Air Force Base, Texas.

Lieutenant Colonel Paul Welch, MC, USA, is the Chief of Nephrology Services at the Walter Reed Army Medical Center in Washington, D.C.; LTC Welch also serves as the Nephrology Consultant to the Army Surgeon General.

Captain Kevin Yeskey, USPHS, in his role as the Chief Medical Officer for the USPHS Office of Emergency Preparedness, directed all medical operations for the Kosovo Refugee Camp set up at Fort

Dix, New Jersey. Under Captain Yeskey's leadership, some 3,000 refugees were medically screened and provided health care as required for clearance prior to immigration into the United States.

Class of 1984.

Captain Martin Deafenbaugh, MC, USN, served as the Chairman and Residency Program Director in the Department of Orthopedic Surgery at the Naval Medical Center, Portsmouth, Virginia. Following his transfer to the United States Naval Academy, CAPT Deafenbaugh is now the Academy's Director of Orthopedics and Sports Medicine.

Colonel Monte Dirks, MC, USA, is Chief of Ophthalmology at the Brooke Army Medical Center, Fort Sam Houston, Texas.

Lieutenant Colonel (select) Jeff Ginther, MC, USA, is Chief of Orthopedics at the Eisenhower Army Medical Center, Fort Gordon, Georgia.

Commander Michael Holtel, MC, USN, is the Chief and Residency Program Director in the Department of Otolaryngology at the Tripler Army Medical Center in Hawaii. **During February of 1999, the Chair of the USU Department of Surgery noted that all five Program Directors of Surgical Residency Programs with the Department of Surgery at the Tripler Medical Center are USU graduates.**

Commander Chris Osgood, MC, USN, is the Senior Medical Executive at the Naval Hospital, Rota, Spain. Commander Osgood, who was recently selected for promotion to Captain, also served as the hospital's Director of Medical Services.

Class of 1985.

Lieutenant Colonel William Burkhalter, MC, USA, is the Program Director and Assistant Chief of Orthopedic Surgery at the Tripler Army Medical Center in Hawaii.

Commander Robert Darling, MC, USN, served as a member of the White House Medical Unit and as one of the Physicians to the President of the United States. Commander Darling has since been assigned as Chief, Hospital and Installation Preparedness Branch, Medical Operations Division, at the U.S. Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland.

Commander Kathleen Moeller, MC, USN, earned the Meritorious Service Medal while assigned to the hospital ship, USNS Comfort, which is home-ported in Baltimore, Maryland. According to her citation, while serving as the Head of the Clinical Support Services Department, Commander Moeller made tremendous improvements to a multitude of medical services aboard the ship. She acquired more than \$4 million in mission-essential equipment for her department and saved the command more than \$60,000 annually on vendor contracts. The Clinical Support Services Department also passed two major inspections under Commander Moeller's leadership.

Captain Rick Morrissey, MC, USN, is the Head of Cardiology at the National Naval Medical Center in Bethesda, Maryland.

Lieutenant Colonel James Olsen, MC, USA, is the Director of the Transitional Year Residency Program at the Tripler Army Medical Center in Hawaii.

Lieutenant Colonel Lee Ronningen, MC, USA, is Chief of Urology at the Madigan Army Medical Center in Tacoma, Washington.

Class of 1986.

Commander John Avallone, MC, USN, is assigned to the Department of Ophthalmology and is also the Director of the Transitional Internship Program at the National Naval Medical Center in Bethesda, Maryland.

Lieutenant Colonel Lori Heim, USAF, MC, was named Department Chair and Director of the Family Practice Residency Program at the 96th Medical Group, Eglin Air Force Base, Florida. Lt.Col. Heim previously served on the faculty of the USU SOM Department of Family Medicine.

Lieutenant Colonel Alan Januszewicz, MC, USA, formerly the Division Surgeon for the 82nd Airborne Division at Fort Bragg, North Carolina, was one of only two Army Lieutenant Colonel physicians (both USU graduates) recently selected to serve as a Battalion Commander. Lieutenant Colonel Januszewicz is assigned to the 212th Mobile Army Surgical Hospital in Germany.

Commander Peter Linz, MC, USN, is the Director of the Cardiology Fellowship Program at the Naval Medical Center in San Diego, California.

Lieutenant Colonel Guy Runkle, MC, USA, is the Director of the Family Practice Residency Program at the Madigan Army Medical Center in Tacoma, Washington.

Lieutenant Colonel Andrew Satin, USAF, MC, is Vice Chair of the USU Department of Obstetrics and Gynecology. Lieutenant Colonel Satin is also the Director of the Obstetrics and Gynecology Residency Program for the National Capital Consortium.

Lieutenant Colonel Steve Swann, MC, USA, formerly the Division Surgeon for the 101st Airborne Division/Air Assault at Fort Campbell, Kentucky, was one of only two Army Lieutenant Colonel physicians recently selected to serve as a Battalion Commander. LTC(P) Swann assumed command of the 168th Area Support Medical Battalion at Taegu, Republic of Korea.

Colonel Tom Travis, USAF, MC, is serving as the Air Force Surgeon General's Consultant in Aviation Medicine at Bolling Air Force Base in Washington, D.C. Currently, 12 of the 16 Specialty Consultants to the Air Force Surgeon General are USU graduates.

Class of 1987.

Major Nadine S. I. Aguilera, USAF, MC, won the 1999 John Hill Brinton Award as the primary author of the article, "Differential Expression of Cyclin D1 in Mantle Cell Lymphoma and other non-Hodgkins's Lymphomas," which was published in the December 1998 issue of the American Journal of Pathology. Named after the first curator of the Army Medical Museum, the award is given to a junior staff member selected by a panel from the Armed Forces Institute of Pathology (AFIP) Scientific Advisory Board. Major Aguilera, who is board certified in Anatomic and Clinical Pathology with a special qualification in Hematology, is the Assistant Chair of AFIP's Department of Hematopathology.

Commander Gregory Barber, MC, USN, is the General Surgery Intern Coordinator for the Department of General Surgery, at the Naval Medical Center in Portsmouth, Virginia.

Major Paul Dougherty, MC, USA, is the Program Director for the William Beaumont Army Medical Center/Texas Tech University Orthopaedic Residency Program, Orthopaedic Surgery & Rehabilitation Service, William Beaumont Army Medical Center, El Paso, Texas. Major Dougherty is also an Assistant Professor of Surgery at USU.

Lieutenant Colonel Tom Neal, USAF, MC, is serving as the Air Force Surgeon General's Consultant in Occupational Medicine at Bolling Air Force Base in Washington, D.C.

Lieutenant Colonel John Powell, MC, USA, who recently served as Command Surgeon with the 82nd Airborne Division at Fort Bragg, North Carolina, was recognized by the staff at the Womack Army Medical Center for his caring and untiring personal attention to the families of the soldiers which he sees as his most important mission. Lieutenant Colonel Powell also spent time in a Special Forces aviation unit and as a Company Commander during Operation Desert Shield/Desert Storm. Because of his accomplishments, Lieutenant Colonel Powell was awarded the Excellence in Operational Medicine Award by the American College of Physicians (ACP) during 1999. This award is presented each year by the ACP to recognize an outstanding doctor in the Army; Lieutenant Powell was also selected to be a Fellow of the American College of Physicians during 1999. Lieutenant Colonel Powell was recently selected for promotion to Colonel and is currently assigned as the Deputy Commander for Clinical Services at the U.S. Army Aeromedical Center at Fort Polk, Louisiana.

Commander Paul Rockswold, MC, USN, is Chief of the Family Practice Clinic, Branch Medical Clinic Oceana, Virginia Beach, Virginia.

Lieutenant Colonel Patrick St. Pierre, MC, USA, and **Commander Christopher Olch, MC, USN**, were inducted as Fellows in the American Academy of Orthopaedic Surgeons at the Academy's 66th annual meeting in Anaheim, California. LTC St. Pierre is assigned to Madigan Army Medical Center, Tacoma, Washington. CDR Olch is stationed at the Naval Hospital in Bremerton, Washington. They are among 596 new Fellows in the Academy of Orthopaedic Surgeons which has more than 17,000 active members and is the largest medical association for musculoskeletal specialists. All members have completed medical school and at least five years of specialty study in orthopaedics in an accredited residency. program, passed a comprehensive oral and written examination, and are certified by the American Board of Orthopaedic Surgery.

Class of 1988.

Major Jan Arvin-Combs, MC, USA, has been inducted as a Fellow in the American Academy of Orthopaedic Surgeons. She is assigned to the Walter Reed Army Medical Center in Washington, D.C.

Lieutenant Colonel William Doukas, MC, USA, is the Chief of Orthopedics at the Womack Army Medical Center at Fort Bragg, North Carolina.

Major Michael Edwards, USAF, MC, is a plastic surgeon with the 99th Medical Operations Squadron, Nellis Air Force Base, Nevada. Board-certified in general surgery and plastic surgery, Major Edwards is Chief of both Surgical Services and the unit's Professional Staff. He will be promoted to Lieutenant Colonel in May of 2000.

Major Thomas Erchinger, MC, USA, received the Andrew C. Ruoff III Award at USU's 19th Surgical Associates Day. Major Erchinger is a surgeon at the Landstuhl Regional Medical Center in Germany.

Major Brian Unwin, MC, USA, has transferred from the Eisenhower Army Medical Center, Fort Gordon, Georgia, to the Darnall Army Community Hospital, Fort Hood, Texas, where he is the Director of the Family Practice Residency Program. Major Unwin was recently selected for promotion to Lieutenant Colonel.

Class of 1989.

Colonel Glenn Mitchell, MC, USA, is the Command Surgeon for the U.S. Southern Command, Miami. His office had responsibility for all medical relief operations in the Caribbean and Latin America following Hurricanes Georges and Mitch. The Colonel is also the Vice Chair for Aerospace Medicine on the American Board of Preventive Medicine. He is responsible for certifying all aerospace medicine candidates. Additionally, Colonel Mitchell was elected as the first Vice President of the Aerospace Medical Association; he will become President of this international medical society in 2001.

Major Gale Skousen, USAF, MC, recently graduated from the Family Practice Residency at Offutt Air Force Base, Nebraska. Major Skousen is now stationed at Fort Sam Houston, Texas, where he is an instructor at the Physician Assistant School.

Class of 1990.

Major Paul D. Casner, MC, USA, served as the Officer-In-Charge of the Aid Station at Camp Comanche in Bosnia during 1999. Major Casner is assigned at Darnall Hospital at Fort Hood, Texas. He was temporarily assigned to Bosnia to assist in Operation Joint Forge.

Major Eric Lund, MC, USA, returned in March of 1999 from a six-month deployment to Bosnia where he was the Deputy Division Surgeon and Preventive Medicine Officer with the 1st Cavalry

Division. Major Lund worked with senior physicians from other Nations - including Sweden, Poland, Denmark, Russia, and Turkey - to develop and implement plans for minimizing respiratory and other such diseases among troops. They also implemented influenza surveillance among the U.S. forces - the first to be done in Bosnia-Herzegovina since before that Nation's war earlier in the decade. Major Lund also led a pilgrimage to the Shrine of Peace in Medjugorje in southwestern Bosnia-Herzegovina. He is currently the Chief of the Department of Preventive Medicine at the Darnall Army Community Hospital in Fort Hood, Texas.

Class of 1991.

Major David Della-Giustina, MC, USA, is the Residency Program Director in the Department of Emergency Medicine at the Madigan Army Medical Center, in Tacoma, Washington; Madigan's Emergency Medicine Program is recognized as one of the top-rated programs in the Nation. Major Della-Giustina also received the Rookie of the Year Award at the American College of Emergency Physicians Annual Conference. The award recognizes the first-year faculty member with the highest performance ratings among the conference presenters.

Major Bruce Edwards, USAF, MC, transferred from the U.S. Air Force Hospital at the Royal Air Force (RAF), Lakenheath, United Kingdom where he was the Flight Commander for Operational Medicine, to Harvard University. Major Edwards was accepted into the Air Force's Aerospace Medicine Residency Program and will finish his Master's Degree in Public Health before completing Phase II of the program at Brooks Air Force Base, Texas.

Major David Walker, USAF, MC, is Chief of Inpatient Psychiatric Services at Wilford Hall USAF Medical Center, Lackland Air Force Base, Texas. Major Walker completed a Fellowship in Forensic Psychiatry at the University of South Carolina in 1998 and is now certified in both General and Forensic Psychiatry.

Class of 1992.

Lieutenant Commander Glen "Duke" Crawford, MC, USN, was named Doctor of the Year at the Naval Hospital in Camp Lejeune, North Carolina. Lieutenant Commander Crawford is the Head of the Department of Mental Health and has recently passed his subspecialty boards in Forensic Psychiatry.

Major Mark Koeniger, USAF, MC, was selected as the Air Force Flight Surgeon of the Year. Major Koeniger was first selected as the U.S. Air Forces in Europe Flight Surgeon of the Year while assigned to the 37th Airlift Squadron, Ramstein Air Base, Germany. The top flight surgeons from each Air Force major command are invited to the annual Aerospace Medical Association meeting, where the Malcolm Grow Award for Air Force Flight Surgeon of the Year is announced. The Air Force Surgeon General makes the award presentation. Major Koeniger cited several factors for his selection during his acceptance of the award: "First, my experience at USU gave me a strong background in tropical and deployment medicine, which served me well on numerous deployments to Africa. Secondly, my experience as a family physician allowed me to provide a full range of medical care, to include obstetrics,

to the 1,100 active duty and dependents in the 37th Airlift Squadron at Ramstein Air Base, Germany." According to the nomination submitted by the 37th Airlift Squadron Commander, Major Koeniger single-handedly ensured the health and readiness of 444 active duty members and 71 1 family members assigned to the squadron. "His leadership and dedication permitted the 37th to complete 4,724 sorties, logging 9,843 flight hours." Lieutenant Colonel Douglas Kreulen also wrote, "Throughout the year, he ensured support for 36 real-world deployments to 58 different countries. From Russia, to South Africa, Turkey and the West Coast of the United States, he never wavered in his support." Major Koeniger also was a member of a rapid reaction evacuation team sent to Belgrade, Serbia, to ensure the immediate evacuation of remaining American Embassy personnel in the event negotiations over Kosova broke down. "For mission success, we don't leave home without Mark," Colonel Kreulen wrote. Major Koeniger is currently assigned as the Commander of Flight Medicine at the 18th Aeromedical Squadron, Kadena Air Base, Japan.

Lieutenant Commander Joseph McMahon, MC, USN, was selected to serve as the Flight Surgeon to the Blue Angels. After working as an emergency room technician at Harrison Memorial Hospital, LCDR McMahon entered the SOM in 1988. He received his Naval Flight Surgeon Wings in April of 1994; in 1996 he was selected as the Commander, Naval Reserve Forces Flight Surgeon of the Year. In July 1997, he reported to Patrol Squadron 30, Naval Air Station Jacksonville as the Flight Surgeon for the largest squadron in the Navy. He is a member of the DoD/NASA Space Operations Medical Support Team and joined the Blue Angels during October of 1998.

Class of 1993.

Lieutenant Thomas Chupp, MC, USN, was assigned to temporary duty with the U.S. Forces Support Group in Haiti. Lieutenant Chupp's regular duty assignment is with the Department of Family Practice at the Naval Medical Center in Portsmouth, Virginia.

Class of 1994.

Lieutenant Steven Hudson, MC, USN, was selected to serve as one of the Flight Surgeons for HMX-1, the President's helicopter squadron at Quantico, Virginia.

Lieutenant Commander David Murphy, MC, USN, completed his residency in Internal Medicine at the Naval Medical Center in San Diego, California. Lieutenant Commander Murphy recently received a Navy Commendation Medal (gold star) for designing the Recruit Tobacco Cessation Program that is currently used at the Naval Training Center in Great Lakes, Illinois.

Class of 1995.

Lieutenant Lisa Cartwright, MC, USN, is a Urology Resident at the Naval Medical Center in Portsmouth, Virginia. Lieutenant Cartwright was previously assigned as a General Medical Officer aboard the USS Wasp.

Captain Victoria Cartwright, MC, USA, was recently presented the Army Surgeon General's Physician Recognition Award for being among the top physicians at the 0-3 level in the Army. Captain Cartwright currently serves as a pediatrician at the Madigan Army Medical Center and as the Brigade Surgeon for the 1st Special Forces Brigade at Fort Lewis, Washington.

Class of 1996.

Captain Tom Djkes, MC, USA, is the Brigade Surgeon for the 3rd Brigade, 101st Airborne Division (Air Assault), Fort Campbell, Kentucky.

Captain Jim Geracci, MC, USA, is serving as the Squadron Flight Surgeon for the 1-7 Cavalry, the Divisional Cavalry Squadron for the 1st Cavalry Division in Fort Hood, Texas.

Lieutenant Sean Kelly, MC, USN, completed a six-month deployment to Okinawa with the 1st Battalion, 8th Marines, as part of the Navy's Unit Deployment Program (UDP). Each year, UDP units based in the United States go to Okinawa for six months of training. Following Okinawa, they are ready to deploy to mainland Japan, Korea, or other Pacific countries. Lieutenant Kelly is currently based at Camp Lejeune, North Carolina.

Captain Aaron Pitney, MC, USA, completed his Pediatric Residency Program and is currently assigned to a three-year Fellowship in Pediatric Hematology-Oncology at the Walter Reed Army Medical Center in Washington, D.C.

Lieutenant Michael Sullivan, MC, USN, a Flight Surgeon with the Marine Tactical Electronic Warfare Squadron One, participated in the NATO military offensive against Yugoslavia when the Squadron deployed to Aviano Air Base, Italy. The Squadron initially deployed to Turkey in support of Operation Northern Watch, enforcing the no-fly zone over northern Iraq, but was diverted to Aviano when NATO began military operations in the Yugoslav Province of Serbia. Lieutenant Sullivan's Squadron is based at the Marine Corps Air Station, Cherry Point, North Carolina.

Class of 1997.

Lieutenant Commander Brad Douglas, MC, USN, completed the first phase of his residency in Aerospace Medicine at the Johns Hopkins University School of Public Health during 1999; he was reassigned to the Naval Aerospace and Operational Medicine Institute in Pensacola, Florida, for phase two of his training.

Class of 1998.

Lieutenant Michail Charissis, USN, MC, appeared on the Learning Channel series, "Without Warning" in June, 1999. During 1996, while a medical student at USU, Lieutenant Charissis was a

passenger on a Maryland commuter train that collided with an Amtrak passenger train in Silver Spring, Maryland. He pulled a badly injured passenger from the burning commuter train after forcing open one of the windows. Eleven people were killed in the accident. His actions and subsequent lessons learned by the rail systems were the focus of the television show. Lieutenant Charissis received the Navy and Marine Corps Medal from the Secretary of the Navy for his heroic actions. Lieutenant Charissis is currently a psychiatry resident at the Naval Medical Center, Portsmouth, Virginia.

Lieutenant David Gahn, USPHS, was named the University of Texas Medical Branch's Outstanding First Year Resident, over all other PGY-1 residents. Lieutenant Gahn is a Resident in Obstetrics and Gynecology.

Lieutenant David Gwinn, MC, USN, presented his paper, "Relative Gender Incidence of ACL Injury at a Military Service Academy," at the Society of Military Orthopaedic Surgeons' 40th Annual Meeting where it was judged runner-up for the best presentation by a resident. Additionally, Lieutenant Gwinn presented the paper at the 1999 American Academy of Orthopaedic Surgeons' Annual Meeting, where it was published on the Academy's News Bulletin.

Captain Shawn Taylor, MC, USA, presented his paper, "Lower Extremity Weight Training Affects Injury Rate in Endurance Athletes," at the Society of Military Orthopaedic Surgeons' 40th Annual Meeting in Vail, Colorado, in December of 1998. Captain Taylor also co-authored four additional abstracts presented at the meeting: "Single Incision Distal Biceps Tendon Rupture Repair: Surgical Restoration Compared to Normal Anatomy," "An Anatomical Analysis of the Supraclavicular Nerves," "The Anatomy of the Insertion of the Anterior Deltoid Muscle," and, "Suprascapular Nerve Exposure Utilizing a Superior Approach." The Suprascapular nerve poster was the runner-up for the Giller Award for best poster presentation. The last four papers were also presented at the 1999 American Academy of Orthopaedic Surgeons' Annual Meeting; and, the Suprascapular Nerve paper was released on the Academy's News Bulletin as a new superior surgical approach.

Class of 1999.

Captain Tom Eccles, MC, USA, attended the Army Flight Surgeon Course at Fort Rucker, Alabama. He was selected as the Distinguished Honor Graduate from among 30 student physicians, physician's assistants, and medical students who attended the course.

Selected Profiles of USU School of Medicine Graduates.

Joint Efforts of the Public Health Service, USU alumni, and USU Faculty in the Refugee Relief Operation at Fort Dix.

"This is the most profoundly positive and most unique experience of my career, and at the same time an example of how USU prepares people to perform in something of this magnitude."

Commander Joe Kaczmarczyk, USPHS, USU Class of 1992, "Refugee Relief Operation," the USU Quarterly, page 36.

Operation Provide Refuge. During 1999, some 4,000 Kosovar refugees were flown to Fort Dix, New Jersey. Behind the scenes numerous members of the U.S. Public Health Service Commissioned Corps and Disaster Medical Assistance Teams, many of them USU graduates and faculty, worked selflessly to help ease the refugees' transition from the dangerous conflict in their homeland to housing in Army barracks at Fort Dix.

USU Alumni Oversees the Medical Requirements. The Department of Health and Human Services received the tasking in late April 1999 to set up a refugee camp at Fort Dix. The Chief Medical Officer for the Public Health Service (PHS) Office of Emergency Preparedness, and USU alumni from the Class of 1983, Commander Kevin Yeskey, was responsible for the medical aspects of the operation, "Provide Refuge." Commander Yeskey, previously assigned as the Director of the USU Center for Disaster Medicine and Humanitarian Assistance and Commander of the PHS Disaster Medical Assistance Teams (DMAT), had significant experience in relief operations, including those involving displaced populations. Commander Yeskey was notified on April 30, 1999 that the refugees would arrive in three days. After reviewing the proposed site for the health clinic, he designed a crude floor plan with the contractor, and following five, 21-hour days, the clinic was ready for the refugees' arrival on May 5th. All totaled, nine plane loads, each carrying between 430 to 450 Kosovar refugees, arrived at Fort Dix throughout May. The Immigration and Naturalization Service (INS), the Department of Defense, the Joint Volunteer Agency, and the Red Cross all worked with the PHS which was the lead agent in Operation Provide Refuge.

Staffing Levels. In all, staffing levels for the health clinic averaged about 90 persons who were constantly rotating in and out, including 13 physicians from various primary care disciplines, one dentist, 30 nurses, four physician assistants/nurse practitioners, three pharmacists, two lab technicians, and one mental health officer. In addition, there were 12 medical records technicians, one sanitarian for preventive medicine measures, six paramedics, and 17 management support team members who helped with supplies, transportation, personnel, and other administrative and logistical matters related to the clinic. Back in Rockville, Maryland, PHS Office of Emergency Preparedness employees manned their Emergency Operations Center, continually working to line up the next group of replacement health care workers.

Mission of the Health Clinic. Following initial briefings and information collection by the INS, the refugees reported to the health clinic. Commander Yeskey's team had to screen the refugees, meet their health care needs, and assist them on their way to out-processing. At the same time, the health clinic had to accommodate frequent personnel rotations. Commander Yeskey was adamant that the refugees' medical care would be the ultimate factor in any decision-making. Clinic staff were on duty seven days a week. There were no eight-hour work days, no holidays and no weekends. Health care workers screened between 250 and 300 patients per day; approximately 120 per day in acute care. Between May 5 and May 28, there were more than 4,018 refugees screened, 10,000 immunizations given, almost 3,000 X-rays, and more than 2,700 lab tests.

USU Presence. Among the Commissioned Corps officers, in addition to **Commander Yeskey**, were the following USU graduates: **Lieutenant Commander Alan Arbuckle (SOM Class of 1990); Commander Phillip Coyne (SOM Class of 1985); Lieutenant Lisa Mathis (SOM Class of 1993); Lieutenant Rochelle Nolte (SOM Class of 1996); Captain Vito Caserta (MPH Class of 1994); Commander Joe Kaczmarczyk (MPH Class of 1992); Commander Steve Scott (MPH Class of 1989); and, Lieutenant Commander Yukiko Tani (MPH Class of 1993).** In addition, USU faculty members included: **Captain William Haffner, Chair, USU SOM Department of Obstetrics and Gynecology; Captain Craig Vanderwagen, assigned to the Indian Health Service Office of Health Promotions in Rockville, Maryland, and a faculty member in the USU Department of Family Medicine; and, Captain Rick Niska, Chief Medical Officer at the National Health Service Corps, a faculty member in the USU Department of Military and Emergency Medicine, and currently enrolled in the USU Master of Public Health Degree Program.** Those who participated in the operation ... from saving lives of babies with fever-induced seizures and delivering healthy babies despite serious obstetrical problems ... who administered over 10,000 immunizations ... to covering the media ... expressed much the same reaction: "It was very rewarding. The people were very grateful. It was really humbling to take care of people who were living at the same standard of living as yourself a short time ago and then had nothing DMAT missions are usually always hectic ... but there was more teamwork on this one. We all worked really hard but we felt very positive about it." Thanks in large part to the dedicated efforts of the PHS and the USU graduates and faculty in the Commissioned Corps, thousands of Kosovar refugees have found sponsors and are well on their way to living a healthy life in the United States.

Army.

"Being a military doctor is like living in a small town. You are taking care of your friends and neighbors."

Colonel Bill Madigan, MC, USA, USU Class of 1982, during an interview for the USU Spring 1999 issue of the Quarterly, page 23.

Colonel Bill Madigan, MC, USA, USU Class of 1982, is the Director of Pediatric Ophthalmology and Strabismus, the Ophthalmology Residency Program Director at the Walter Reed Army Medical Center, and the Chief of the Ophthalmology Division of the USU Department of Surgery. Colonel Madigan came to USU via the U.S. Military Academy at West Point, where he was on the Dean's List and from where he earned his undergraduate degree in 1973. Following his graduation from West

Point, as a newly-commissioned second lieutenant, Madigan served as the forward observer, fire direction officer, and subsequently, as the Executive Officer of B Battery, 3rd Battalion, 13th Field Artillery at Schofield Barracks, Hawaii. Prior to matriculating at USU, he spent his last year as a Battery Commander at Schofield Barracks. With an interest in the biological sciences, and following an experience in a military hospital which made him determine to try to improve the military health care system, he decided to apply to medical school at USU. He **"thought it would be neat to take care of people in the military;"** Colonel Madigan comes from a military family. Both his father and grandfather were Army officers.

Colonel Madigan entered USU in 1978 and was elected President of the Class of 1982. At his graduation, he presented the student commencement address and received the Association of Military Surgeons of the United States Outstanding Medical Student Award. After graduation, Colonel Madigan completed his internship in internal medicine, followed by a one-year assignment as Commander of the U.S. Army Health Clinic at Fort Ritchie, Maryland. He was trained in ophthalmology at the Walter Reed Army Medical Center, where he was the Chief Resident during his senior year. He was then assigned as Chief of the Eyes, Ears, Nose and Throat Clinic at the 121st Evacuation Hospital in Seoul, South Korea. In 1988, Colonel Madigan returned to the Washington, D.C. area for a Pediatric Ophthalmology and Strabismus Fellowship at Children's Hospital Medical Center. Following his fellowship, Colonel Madigan assumed his current position as the Director of Pediatric Ophthalmology and Strabismus at the Walter Reed Army Medical Center. Five years later, Colonel Madigan was selected to be the Ophthalmology Residency Program Director, and has since trained more than 45 physicians, many of them USU graduates.

Colonel Madigan is active in teaching not only residents, but USU medical students as well. He is an Associate Professor of Surgery at USU, and is a regular lecturer for the Ophthalmic Course of the Introduction to Clinical Medicine I and II classes. In addition, he serves as the Coordinator for the Fourth-Year Medical Student Clerkship in Ophthalmology at the Walter Reed Army Medical Center. Colonel Madigan also ensures plenty of time for his patients. His exceptional skill as an ophthalmologist is directly credited by many of his patients for continuously resolving their complex problems. One serviceman, whose double vision was resolved through surgery, was quoted to say: "Where would we be if Doctor Madigan hadn't come along?"

Colonel Madigan's desire to remain active with the University led to his role as a founding member of the USU Alumni Association Executive Board. His motivation to restore the Alumni Association's fiscal independence and to provide the school with a self-supporting organization that could benefit the alumni, students, and the University as a whole, led to his appointment as President of the USU Alumni Association. According to Colonel Madigan, "the Association is well on its way to achieving that goal, and to meeting a new one: development of local chapters and an independent national office cooperative with the University."

Navy.

"...I am simply doing my best to address areas of need in our military and our community. With every achievement I acquire the resources and drive to do more. With every failure comes new lessons and a firm resolve to work harder."

Lieutenant Adrian Talbot, MC, USN, USU Class of 1996, interview with the USU Quarterly, Autumn 1999, page 21.

Navy Lieutenant Adrian Talbot, a Class of 1996 SOM graduate, is a general practitioner at the Naval Ambulatory Care Center in New Orleans, the founder and CEO of the International Medical Foundation, CEO of Phiomed Clinical Consultants, and a second-year student at the Loyola University School of Law.

Born in Guyana, South America, Adrian Talbot moved to the United States in 1972 and lived in the South Bronx section of New York City with his parents and four siblings. He graduated from high school; but, his parents could not afford to send him to college. Adrian pursued his interest in Medicine and joined the Navy, serving as a hospital corpsman for four years. It was during Hospital Corps School, that he developed resolve and focus and was soon recognized for his excellent performance and dedication. As a result, in 1986, he was nominated for an appointment to the Naval Academy by the Secretary of the Navy; he chose instead to continue his naval service with the Marine Corps in Panama and Okinawa. When he left the Navy in 1988, Adrian earned a naval ROTC scholarship and entered Fordham University and SUNY Maritime College in the Bronx, studying chemistry and naval science. While an undergraduate, he earned distinction as the National Institutes of Health Minority Access to Research in Chemistry Scholar.

During his service with the Marines as a corpsman, Adrian had worked with two USU graduates, **Eric McDonald (Class of 1985)** and **Steve Lewinski (Class of 1986)** who shared information about USU and its opportunities. As a corpsman, Adrian observed that most military physicians had more opportunities to experience and address clinical and operational challenges than civilian physicians, and **that USU graduates were generally more thorough, competent, and extremely effective in operational settings**. He chose USU largely due to his observation that it consistently produced medical officers of the highest quality and caliber. Adrian applied to the USU SOM and entered the SOM in the Fall of 1992.

Adrian Talbot's desire to help others immediately led him as a USU medical student to volunteer his time and resources to aid elementary school children in southeast Washington, D.C. His goal was to provide those children with resources and incentives to continue to succeed in junior and senior high school and beyond; to that end, Adrian, while a student in the SOM, established the Chronograph Scholar Award. For the past seven years, one male and one female student from each of the 35 public elementary schools in southeast Washington, D.C., have been selected to receive the award, which consists of a watch and a certificate of recognition. The award recognizes children for excelling academically and was named for Dr. Talbot's belief that time management is one of the most valuable skills a person can have; having a watch gives a child the opportunity to better appreciate the value of time. Some of these students will have the opportunity to compete for the Chronograph Scholarship, a cash award used to cover the cost

of college tuition and books. The program was recently extended to include ten elementary schools in the New Orleans public school system, with awards presented in cooperation with the Urban League of Greater New Orleans and Dillard University. The USU Office of Recruitment and Minority Affairs has assisted Dr. Talbot in the presentation of these awards throughout the selected D.C. schools.

From the Chronograph Scholarship Scholar Award, Lieutenant Talbot established the International Medical Foundation (I-MED). The I-MED was envisioned to be a non-profit organization making a positive and meaningful impact in the areas of education and medicine in the under-served communities of the United States and overseas. Dr. Talbot recognizes that incorporating and acquiring the non-profit status for I-MED was the idea of USU faculty: **Colonel Jeanette South-Paul, MC, USA; CAPT (Select) Evelyn Lewis-Clark; and Maury Hamilton, Ph.D.**

Lieutenant Talbot and his wife, **Itzel**, formed Phiomed Clinical Consultants to provide medical care in the under-served areas of New Orleans. Their goal is to increase the access to basic health information and preventive care by taking medical services into the under-served communities and working with neighborhood churches to establish programs. Phiomed has six staff members, including Dr. Talbot and his wife, who is a clinical pharmacist, two additional physicians, a cardio-fitness specialist and a services coordinator, both of whom are lawyers. The program is similar to the Helping Hands Clinic at USU. Currently, Lieutenant Talbot is working toward a degree in law at Loyola University, which he believes will enable him to be a more effective medical professional.

Lieutenant Talbot is also an active duty Naval physician. As a general officer at the Naval Ambulatory Care Center in New Orleans, he not only sees patients, but also serves on the Utilization Management Board, the Quality Management Board, the Pharmacy and Therapeutics Committee (which he chairs), and the Leadership Committee (which he also chairs). Additionally, Lieutenant Talbot serves as the Independent Duty Corpsmen Program Director and Fleet Liaison Officer. Lieutenant Talbot's motivation is his belief that we all have an obligation to do the best we can for ourselves and our communities.

FACULTY OF THE SCHOOL OF MEDICINE.

Composition. The School of Medicine has 290 full time faculty members: 177 civilians; and, 113 uniformed officers. There are approximately 3,407 non-billeted/off-campus faculty who assist in the USU programs of which 1,035 are civilians and 2,372 are uniformed officers.

SOM Clinical and Consultative Services Generate an Estimated \$7 Million in Cost Avoidance for DoD in Fiscal Year 1999. The affiliated Medical Treatment Facilities (MTFs) in the National Capital Region (the National Naval Medical Center (NNMC), the Walter Reed Army Medical Center (WRAMC), and the Malcolm Grow Air Force Medical Center (MGMC) use the services of the USU faculty for the provision of health care.

The USU SOM civilian and military clinical faculty members, as a part of maintaining their credentials and level of proficiency, provide medical services and consultation to the hospital patients and staff and teach and supervise residents. In order to meet national accreditation standards, all teaching hospitals must provide both patient care and teaching/supervision of medical students, interns, and resident physicians. These accreditation standards are **not** generated by USU; they will continue to exist at the MTFs whether or not USU is operating. Therefore, cost avoidance in the Department of Defense (DoD) is generated by the hours of clinical service and medical expertise provided by the USU civilian and military faculty. Thirteen USU SOM academic departments (Anesthesiology, Dermatology, Family Medicine, Department of Medicine, Military and Emergency Medicine, Neurology, Obstetrics and Gynecology, Pathology, Pediatrics, Preventive Medicine and Biometrics, Psychiatry, Radiology and Nuclear Medicine, and Surgery) provided clinical and consultative support to DoD that totalled some 130,000 hours in 1999, with an estimated cost avoidance of \$7 million.

Without the patient care and special services provided by the USU SOM faculty throughout the DoD medical facilities, the military hospitals, clinics, and other facilities would find it necessary to increase their staffs by 130,000 work hours or increase the use of commercial sources.

USU SOM Faculty Achieve National and International Recognition. The SOM faculty members continue to publish at a rate equal to, or greater than, the national averages for their fields. SOM faculty members are regularly selected to serve on various study sections for the National Institutes of Health, and for other research-granting agencies. Many faculty members, due to their national/international reputations are: 1) selected for editorial boards; 2) serve as consultants or advisors to the White House, the Office of the Secretary of Defense, international schools of medicine (e.g., China, France, Japan, Mexico, Poland, Russia, Thailand, etc.), and numerous Federal Agencies; 3) give invited lectures; and serve on federal, national, and international committees; and, 4) as senior officers in a wide variety of professional organizations. A number of basic science and clinical faculty hold senior and deputy editor positions on journals representing their disciplines and specialties. Overall, the SOM faculty has clearly achieved recognition with its peers across disciplines and specialties. USU SOM faculty are routinely chosen to serve on university, military, and federal and professional organization committees in

a variety of leadership and service capacities. Due to the unique nature of the USUHS SOM mission and certain of its departments, faculty in the Departments of Military and Emergency Medicine, Preventive Medicine and Biometrics, Psychiatry, and Medical History have achieved national and international recognition (Appendix C Provides Examples of Individual Achievements and Recognition).

The majority of SOM clinical faculty are located at the teaching hospitals. The large number of enthusiastic, well-trained primary care and specialist clinicians, based at the hospitals throughout the Military Health System, is an invaluable resource for teaching medical students. Under the oversight and guidance of clinical clerkship directors, this large faculty does an excellent job of medical student clinical training, based on surveys of both students and department chairs. A number of the hospital-based faculty are also involved in clinical research programs through the active clinical investigation programs based at the teaching hospitals. To further enhance communication and cooperation between the USU SOM and its affiliated teaching facilities, the Office of the Associate Dean for Clinical Affairs has written and completed an updated series of memoranda of understanding between the University and its affiliated teaching and research institutions that clearly define areas of responsibility and accountability. Based upon student-reported satisfaction, student performance on National Board examinations, hospital commanders' overall satisfaction with the performance of USU graduates, and the large percentage of operational and leadership positions held by USU graduates throughout the Military Health System, the SOM faculty is performing a stable and highly satisfactory job of educating medical students for the Uniformed Services.

Collaborative Efforts.

Teaching. Cooperation in teaching has been systematically developed within the departments, between departments, and within subspecialties, to improve the educational experience of both medical and graduate students (the SOM faculty also provide the instructional base for the Graduate Education Programs at the University). The composite curriculum in behavioral sciences, drawing on Neurology, Psychiatry and Medical Psychology, is a significant example of interdepartmental cooperation in undergraduate medical education. The recent efforts in the Departments of Anatomy and Physiology with collaborative research and a newly designed integrated course structure for the first-year medical students are also examples of excellent communication and resource sharing.

The graduate programs in Neuroscience, Molecular and Cell Biology, and the newly established Interdisciplinary Graduate Program in Emerging Infectious Diseases illustrate a sound cooperative relationship in research and graduate education. The Tumor Biology Program, an interdepartmental effort between the Departments of Pathology and Surgery, serves as a bridge between basic science and clinical practice in Medical Oncology. The special interest groups in cumculum studies have resulted in basic science input into the hospitals, with collaboration in research, and more importantly, with collaboration in teaching, as the basic scientists provide science instruction to the medical house officers and junior faculty within certain subspecialties of mutual interest. (Information was drawn from the SOM 1999 Self-Study, Section VI, pages 7, 9, 14, and 16.)

Research. The research and development goal of the USU strategic plan is to build, sustain, and publicize interdisciplinary research programs relevant to the needs of the Uniformed Services. Currently,

there are four interdisciplinary research programs: 1) Behavioral and Neurosciences. The interdisciplinary program in neurosciences and its Ph.D. graduate program are supported by 29 faculty members whose primary appointments are in 12 of the SOM departments. It provides a seminar series, and flexible program of courses and research areas for graduate students and postdoctoral fellows. Research areas strongly represented by faculty include neuronal development and plasticity, molecular and cellular neurobiology, neuropharmacology, gene expression, neurotransmitter/neuropeptide processing and function, neural regulation of physiologic functions, and clinical neuroscience; 2) Cell, Molecular Biology and Genetics. A second interdisciplinary program, in Cell and Molecular Biology (including genetics), has been developed to contribute to cross-disciplinary interactions, to develop critical skills needed for data presentation and analysis, as well as a seminar series and a journal club, all of which supports a Ph.D. program. Research areas include molecular biology of lymphocyte interactions; host-pathogen interactions; cell surface, cytoplasmic and nuclear receptor signaling pathways, exocrine secretory processes, and gene targeting in mice including a transgenic mouse facility for targeted gene disruption using homologous recombination. The program consists of 37 faculty mainly from six SOM departments; 3) Infectious Diseases and Tropical Medicine. The Department of Microbiology and Immunology and the Department of Preventive Medicine and Biometrics are exceptionally strong in the areas of infectious diseases and tropical medicine. A special interest group from these departments, to include faculty from other departments who are interested in infectious diseases, began meeting and subsequently submitted (and was awarded) an NIH training grant in this area. Members of the group are presently meeting to develop an in-depth interdisciplinary training program (including a Ph.D. degree) to support both military and civilian graduate and postgraduate training; and, 4) Casualty Care and Operational Medicine. A preliminary meeting has been held to assemble an interdisciplinary special interest group in this area. Faculty from the Departments of Surgery, Military and Emergency Medicine, Pathology, Medicine (Division of Military Internal Medicine) and faculty from affiliated research institutes have been involved. In the past, these special interest groups first met to learn about the ongoing research of others, both at USU and off campus. They have considered how to work across their individual laboratories toward interdisciplinary research funded extramurally. At present, individual laboratories are working in the areas of blood/plasma substitutes and storage, anti-inflammatory responses to wounds, wound management and wound healing, management of hemorrhagic shock, nerve repair and neural regeneration, expert systems for trauma management, and medical support for enhanced trauma management training.

Selected Profiles of USU School of Medicine Faculty.

Three USU Faculty Members Receive Student Nominations for the 1999 AAMC Humanism in Medicine Award. Simon Auster, M.D., Associate Professor, USU SOM Department of Family Medicine; William Gilliland, Major, MC, USA, Assistant Professor, USU Department of Medicine, located at the Walter Reed Army Medical Center; and, Linda Lawrence, M.D., Department of Military and Emergency Medicine, located at the Malcolm Grow USAF Medical Center, were recognized as three of 44 physicians nationwide to be nominated by medical students for the 1999 AAMC Humanism in Medicine Award as announced in a joint press release by the AAMC and the Pfizer Medical Humanities Initiative, on October 23, 1999, in Washington, D.C. The AAMC Humanism in Medicine Award is sponsored by the Association of American Medical Colleges (AAMC) and the Pfizer Medical Humanities Initiative. Each year, the award honors medical school faculty physicians embodying the finest qualities in a healer who teaches healing. This is an important award for the AAMC because it

acknowledges the essential role of humanism in medical education, and it entrusts the students themselves with the responsibility of selecting their own role models. The 44 honorees were nominated based on seven defining characteristics of humanism in medical education: positive mentoring skills; compassion; collaboration; tolerance; sensitivity; community service activity; and, observance of professional ethics.

Faculty Member of the Department of Medicine Selected for the 1999 William P. Clements Jr. Award. - Major Mark C. Haigney, USAF, MC, Assistant Professor, Department of Medicine, was chosen by the graduating Medical School Class of 1999 to receive the William P. Clements, Jr. Award. This award is presented to the uniformed faculty educator who exemplifies the principles of excellence in education by personal example and performance. The award is named for a former governor of Texas and Deputy Secretary of Defense who had a keen interest in the education of those who serve the Nation.

Pathology Faculty Member Receives the 1999 SOM Outstanding Civilian Educator Award. - D. Robert Dufour, M.D., Adjunct Professor, Department of Pathology, was chosen by the graduating Medical School Class of 1999 to receive the SOM Outstanding Civilian Educator Award. This award is presented to the civilian faculty member who displays the highest qualities of a medical educator by personal example and performance.

Lifetime Achievement Award Presented at the 1999 Physician Assistants Conference. James A. Zimble, M.D., President, USU, and Professor of Military and Emergency Medicine, received the Lifetime Achievement Award from the Veterans Caucus of the American Academy of Physicians Assistants. The award recognizes the instrumental role played by Dr. Zimble in the commissioning of physician assistants in the United States Navy. The award was announced at the 27th Annual Physician Assistants Conference held in Atlanta, Georgia, on May 31, 1999.

Fragile Babies Can Now Be Protected Against Respiratory Syncytial Virus. Val G. Hemming, M.D., Dean, F. Edward Hebert School of Medicine, and Professor of Pediatrics, was one of the researchers who insisted that an antibody solution could be used against respiratory syncytial virus (RSV). Following the dedicated efforts of Dr. Hemming and his associates, researchers of MedImmune, a biotechnology company formed in 1988, continued to work on developing an antibody, Synagis, that would consist of a simple shot every month during the winter. The Food and Drug Administration approved the drug, Synagis, in late 1998. Now, pediatricians have been finally given an easy, effective tool against one of their most vexing problems. In the largest group of infants at risk, those born four to eight weeks premature who had no underlying lung disease, Synagis is proving to cut the rate of hospitalization from RSV by 82 percent. Even in sicker infants with lung disease, the drug is shortening

hospitalizations by 39 percent. Dr. Hemming's contributions were noted in The Washington Post, on March 22, 1999, in the article entitled "MedImmune's Miracle."

Stanford University Medical Alumni Association Announces Lifetime Alumni Achievement Award. Norman M. Rich, M.D., FACS Leonard Heaton and David Packard Professor, and Professor and Chairman, Department of Surgery, was awarded the J.E. Wallace Sterling Lifetime Alumni Achievement Award on November 19, 1999. The Board of Governors of the Stanford Medical Alumni Association announced this prestigious award in July of 1999. It is the highest honor awarded by the Association and is conferred upon Stanford Medical graduates in recognition of their exceptional academic lifetime achievements. Dr. Rich holds both undergraduate and medical degrees from Stanford University, signed by the former President Stanford of Stanford University. His medical degree also has the signature of **David Packard, President of the Board of Trustees of Stanford University.** Dr. Rich perceives that this honor represents recognition of military medicine and military surgeons. For this reason, Dr. Rich, who has received numerous national and international awards, finds this award to be particularly meaningful.

Department Chair Appointed Editor to Journal. Alison O'Brien, Ph.D., Professor and Chair, Department of Microbiology and Immunology, was appointed during 1999 to serve as the Editor-In-Chief of Infection and Immunity, the prestigious journal of the American Society for Microbiology. Dr. O'Brien will serve as Editor-In-Chief from July 1, 1999 through June 30, 2004.

The USU School of Medicine Department of Neurology.

Epilepsy Research, Medical and Surgical Program in the SOM Department of Neurology Generates Cost-Avoidance for the Defense Health Program. The Epilepsy Monitoring and Surgical Unit at the Walter Reed Army Medical Center is the only program of its kind within the Defense Health Program. This program, conducted under the direction of **Colonel Bahman Jabbari, MC, USA, Professor and Chair, Department of Neurology,** offers extensive monitoring for intractable epilepsy and epilepsy surgery for over 200 soldiers and dependents annually. The program, in its current strength, generates cost-avoidance for the Defense Health Program of at least one million dollars each year. Active protocols during 1999, include the study of post-traumatic epilepsy, biochemical investigation of epileptic tissue (in collaboration with **Dr. Myerhoff, Chief, Neurochemistry, Walter Reed Army Medical Center**), and in vivo investigation of the chemistry of epileptic brain lesions through MRI Spectroscopy.

Colonel Bahman Jabbari, Professor and Chair, and other USU faculty members from the Neurology Department are among the pioneer researchers depicting the effectiveness of botulinum toxin A (Botox) against painful muscle spasms and spasticity of neural trauma, stroke, and multiple sclerosis.

During 1999, a double-blind study was conducted with the focus on the use of Botox on chronic lower back pain, a subject of significant military relevance.

Ann M. Marini, Ph.D., M.D., Assistant Professor, Department of Neurology, spear heads an active stroke research program established in 1999. She is one of the principal investigators of a large multi-center Stroke Prevention Study with the DoD research site located at the Walter Reed Army Medical Center.

Ajay Verma, M.D., Ph.D., Assistant Professor and **Ann M. Marini, M.D., Ph.D., Assistant Professor, Department of Neurology**, conduct numerous projects for the Basic Science Research Division of Neurology. Dr. Verma's research focuses on how perturbations of metabolism and molecular signaling pathways in the brain contribute to brain injury caused by trauma, stroke, or seizures. During 1999, his laboratory invented novel laboratory assays to localize pathogenic molecular processes down to the cellular level. These assays can identify injury induced DNA-damage, activation of nuclear DNA repair mechanisms, changes in receptor/G protein coupling, and intra-cellular calcium buffering mechanisms. A collaborative effort with **Geoffrey Ling, S.F., LTC, USA, Associate Professor, Departments of Anesthesiology and Neurology**, a nationally known neurologist/researcher at USU, focuses on the primary culture of brain cells, exploring in vitro toxicity produced by mimicking the biochemical changes thought to take place after head injury.

USU Professor of Pathology Elected President of the Society for Pediatric Pathology. **Colonel Thomas Stocker, MC, USA, Professor of Pathology**, was installed as President of the Society for Pediatric Pathology. The Society, which has about 600 members, is the major international organization for physicians specializing in Pediatric Pathology. Colonel Stocker has written more than 75 articles, chapters, abstracts, and books. His book, "Pediatric Pathology," is internationally considered as the leading textbook for Pediatric Pathology. Colonel Stocker, who is also an Adjunct Professor of Pathology at Georgetown University Medical School, previously spent 13 years with the Armed Forces Institute of Pathology (AFIP); during that time he served as the Deputy Director of AFIP for some eight years.

Faculty Member Highlighted in U.S. Medicine and Nominated for the 1999 Berry Award in Federal Medical Research. **Major William P. Roach, BSC, Ph.D., Associate Professor, Department of Preventive Medicine and Biometrics, Division of Environmental and Occupational Health**, was highlighted in the July 1999 issue of U.S. Medicine for his publication of new, national laser safety standards for ultrashort laser pulses. His article entitled "Proposed Maximum Permissible Exposure Limits for Ultrashort Laser Pulses" appeared in the April 1999 issue of the Health Physics Journal. Adopted internationally, Dr. Roach's retinal exposure limits represent the first change in national laser safety standards for the protection of potential blinding exposures to laser light in 28 years. The standards specifically refer to retina and cornea safety, as well to protection for the skin. They detail safety limits when working with ultrashort laser pulses, particularly the maximum amount of exposure workers can bear

without risking injury. Nominated for the 1999 Berry Award in Federal Medical Research by the Air Force Medical Operations Agency, Dr. Roach continues his research at USU in the area of military force protection and occupational health for the prevention of potential hazards from laser exposure.

Faculty Member of the Department of Surgery Receives the 1999 Baron Jean Larrey Award for Excellence in Military Surgery. Lieutenant Colonel (P) David Burris, MC, USA, USU Class of 1982, Assistant Professor of Surgery and Chief, Division of Surgical Research, Department of Surgery, received the 1999 Baron Dominique Jean Larrey Award for Excellence in Military Surgery. The award recognizes an active duty U.S. military surgeon who has made outstanding contributions in military surgery, with specific support to the USU mission. Baron Dominique Jean Larrey was a physician whose life spanned the 18th and 19th Centuries. The award is presented each April at USU's Surgical Associates Day and complements the Michael E. DeBakey International Surgeon's Award, which also is presented on the Surgical Associates Day. It is noted that during 1999, Lieutenant Colonel Burris was selected for promotion to Colonel at almost twice the rate of his service peers.

First Uniformed Member of the AMA Section Council on Federal and Military Medicine is Elected to the AMA Council on Medical Education. Colonel Emmanuel G. Cassimatis, MC, USA, and Associate Dean for Clinical Affairs, was the first uniformed member of the American Medical Association (AMA) Section Council on Federal and Military Medicine to be elected to the prestigious AMA Council on Medical Education. This recognition of military medicine is a first within the AMA's House of Delegates. The election took place during June of 1999, at the AMA Annual Meeting of the House of Delegates which was held in Chicago, Illinois. Subsequently, Colonel Cassimatis was appointed to the Accreditation Council on Graduate Medical Education, the accrediting body for all graduate medical education programs in the United States. Dr. Cassimatis was also elected as Secretary of the AMA's Specialty and Service Society.

Michael Feuerstein, Ph.D., Professor, Department of Medical & Clinical Psychology, and his research team, in collaboration with the United States Army Center for Health Promotion and Preventive Medicine (USACHPPM), have been conducting a series of studies designed to identify workplace and individual soldier factors related to low back pain, associated lost time (limited duty), and eventual long-term disability. The ultimate purpose of the work is to provide a scientific basis for a comprehensive approach to the prevention of low back pain and lost time in active duty soldiers, thus reducing the impact of this common, work-related disorder on military readiness. To date, a series of studies published in Military Medicine and The Journal of Occupational and Environmental Medicine have reported on the identification of high risk jobs as well as the characteristics of high risk soldiers and high risk work environments. Recently Dr. Feuerstein and his collaborators completed research on the development of a brief screening tool (The ErgoScreen) that is designed to be used in the field to assist in identifying soldiers at increased risk for low back pain and to facilitate recovery and maximize soldier readiness.

Llewellyn J. Legters, M.D. - A Memorial. Llewellyn J. Legters, retired Professor and Chair, Department of Preventive Medicine and Biometrics, died on August 19, 1999.

Llewellyn J. Legters was born in Clymer, New York, on May 23, 1932. He graduated Summa Cum Laude from the University of Buffalo in 1952 and from the same medical school in 1956. His distinguished military medical career began in 1957 as a proud member of the U.S. Army's 82nd Airborne Division, Fort Bragg, North Carolina, and included decorated tours of duty in Vietnam, as a member of the U.S. Army Special Forces, and in Europe. He was board certified in Preventive Medicine in 1963 and held multiple leadership positions in military preventive medicine, culminated by his appointment as Professor and Chair, Department of Preventive Medicine and Biometrics at USU in 1980. He led the USU Preventive Medicine and Biometrics Department for 17 distinguished years, and compiled scores of outstanding accomplishments, including the authorship of more than 40 scientific publications. During his tenure as Chair, the departmental faculty grew from 5 to nearly 50; and, he established multiple graduate programs including the Master of Public Health, Doctor of Public Health, and Doctor of Philosophy in Zoology. His strength of character and high level of energy resulted in enormous productivity by Dr. Legters and his faculty. His shortened retirement was highlighted by a prize-winning amateur photography career. He will be remembered by his USU family.

RESEARCH CENTERS AND PROGRAMS.

"...We will develop and augment interdisciplinary programs in Infectious Diseases and Tropical Medicine, Casualty Care and Operational Medicine, Health Maintenance and Diseases Prevention ..."

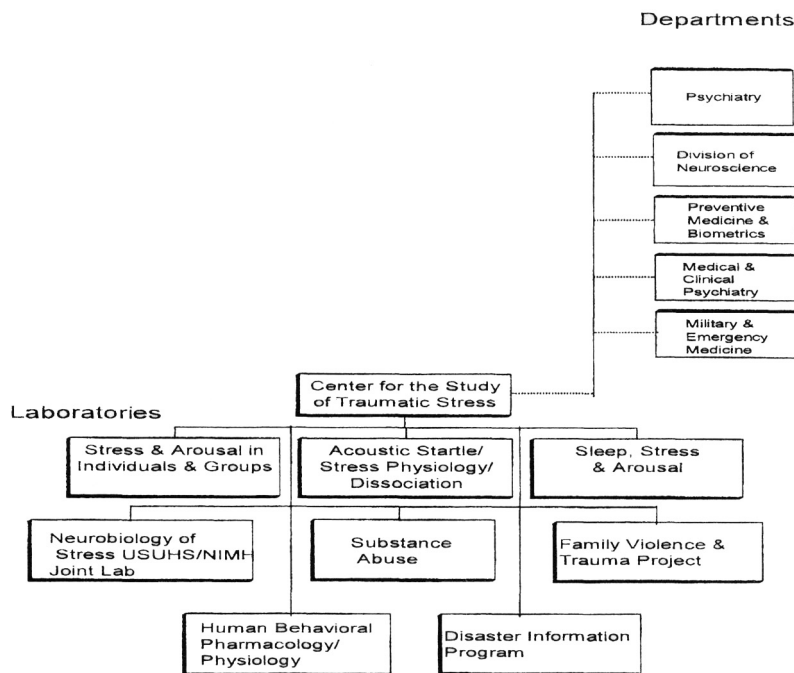
Strategy 3.1, Goal 3 of the USU Strategic Plan, October 1999.

Research is Directed Toward Military Requirements. As discussed in the "Research Administration" section of Part I of this report, the majority of research programs/projects currently taking place at USU are directed to meet the needs of the Uniformed Services. Research protocols throughout the SOM study diseases of high military relevance for troop deployment and sustainment; for example, SOM faculty are using satellite imaging and remote sensing to assist in predicting high-risk locations for malaria occurrence. Research contributed by SOM faculty relating to combat casualty care continues to provide rapid diagnostic methods and treatments which ensure military readiness. In addition, the research of SOM faculty is also directed toward military operational medicine. The following SOM Centers, Activities, and individual researchers are provided as selected examples of the research taking place throughout the School of Medicine.

Selected Profiles of SOM Centers and Programs

(See Appendix C for Additional Examples of Individual Achievements and Recognition)

USU School of Medicine Department of Psychiatry and the Center for Traumatic Stress Consultative Services.



Establishment. Terrorism, hostage events, the poison gas attack on the Tokoyo subway, the Oklahoma City bombing, and disasters such as the Kobe earthquake, as well as more common traumatic events such as motor vehicle accidents, hurricanes, tornadoes, and physical assaults are a substantial health risk to those who serve our Nation in the Uniformed Services and to the general population. USU is an academic institution that is both nationally and internationally recognized for its consultative services to government and private organizations in times of disasters and critical incidents. As the academic health sciences center for the Uniformed Services, USU is well situated to assist in meeting the needs of the Military Health System and of the Nation in the area of traumatic stress. In 1987, USU scientists, educators, and world-wide collaborators (both uniformed and civilian) established the USU Center for Traumatic Stress. At present, investigators from the four USU SOM Departments of Psychiatry, Preventive Medicine and Biometrics, Military and Emergency Medicine, and Medical and Clinical Psychology, and the SOM Division of Neuroscience are collaborating on extensive studies of traumatic stress.

National and International Recognition of the Center's Leadership During 1999. **Robert Ursano, M.D., Professor and Chair, Department of Psychiatry**, was appointed a member of the Consequences of Trauma and Terrorism Coordinating Group (CTTCG), which was established during 1999 by the Department of Health and Human Service, Center for Mental Health Services. The CTTCG provides a forum where federal agencies concerned with the psychological and social consequences of trauma can contribute to the rational organization of planning and response activities to traumatic events and benefit from the expertise of other professionals. In addition, during 1999, Dr. Ursano was appointed to the Advisory Board of the International Center for the Study of Terrorism and Crime in the University of Oklahoma's Department of Psychiatry.

In June of 1999, Dr. Ursano participated in the White House Conference on Mental Health with E. Fuller Torrey, M.D., Director of the Department of Psychiatry's newest collaborative partner, the Stanley Laboratory for Brain Research. At that conference, **President Clinton** was briefed by the Assistant Secretary of Defense for Health Affairs on the combat stress initiatives already in place throughout the Department of Defense. The USU Center for Traumatic Stress was also part of the planning group for the Conference on National Terrorism and Mental Health scheduled during the Fall of 1999 in Oklahoma City. The University of Oklahoma and the National Institutes of Health (NIH) hosted the conference.

In March of 1999, Volume 156 of The American Journal of Psychiatry, included a study by Dr. Ursano and his colleagues in the Center for Traumatic Stress, which presents a focus on how disaster workers' identification with victims puts them at an increased risk for Post-Traumatic Stress Disorder (PTSD). In the same issue of The American Journal of Psychiatry, Dr. Ursano and the staff of the Center for Traumatic Stress (**Carol S. Fullerton, Ph.D.; Richard S. Epstein, Brian Crowley; Tzu-Cheng Kao, Ph.D., Kelley Vance; Karrie J. Craig, Ph.D.; Angela L. Dougall; and, Andrew Baum, Ph.D.**) were also recognized with the publication of their article, "Acute and Chronic Posttraumatic Stress Disorder in Motor Vehicle Accident Victims."

The May 8, 1999 edition of The Economist included an article entitled "A Surfeit of Disaster;" Dr. Robert Ursano is referenced for citing the percentage of Americans who will annually be exposed to a traumatic event (seven percent). Dr. Ursano was identically referenced by The Wall Street Journal on May 3, 1999, in its article, "Witnesses to Violence Struggle to Overcome Long-Term Effects."

Functions of the Center. The purpose of the Center is to increase medical knowledge of the consequences of trauma and disaster and to apply this knowledge to real world problems. Functions of the Center are as follows: 1) to develop and carry out research programs to further extend the knowledge of the medical/psychiatric consequences of trauma and disaster stress; 2) to provide consultation to private and government agencies on the effects of trauma and disaster, health policies related to the medical care of traumatic stress victims, their families and communities, and, individual and organizational recovery following traumatic events; 3) to maintain an archive of medical literature on the health consequences of traumatic stress and traumatic events for individuals, families, organizations, communities, and nations; and, 4) to provide opportunities for post-doctoral training of medical scientists to develop research skills in order to better understand the health consequences of the stress produced by trauma and disasters.

Areas of Study. Twelve major projects are currently funded from the following sources: the Department of Defense, the Department of the Army, the National Alliance for Research on Schizophrenia and Depression; the National Alliance for the Mentally Ill Research Institute; the National Institute on Drug Abuse; the Department of Health and Human Services; the Stanley Foundation; and, the U.S. Marine Corps. Ongoing studies include the following areas: combat stress; the prevention of stress-related disease; shipboard fires and emergencies; relocation stress; prisoners of war; leadership of those suffering from grief; medical personnel in disasters; traumatic stress and the immune function; community responses to disaster; identification of high risk populations; chronic stress; medical treatment following trauma; biomedical responses to stress; family violence; and, others.

Recently funded studies include: combat stress in Bosnian-deployed troops; stress among emergency workers after an air disaster; stress mediators in the U.S. Army; psychological stress in the U.S. military deployed to Desert Storm/Shield; family violence and trauma; stress and women's health; combat, deployment, contingency operations and trauma; basic neurobiology of genetic and second messenger stress responses; stress and arousal symptoms in individuals and groups using the Persian Gulf War symptoms as a paradigm; disaster psychiatry education; natural disasters and health outcome: adult and adolescent responses to Hurricane Andrew; genetic risk for substance abuse and cognitive processing; and, animal models for the study of neurobiology of trauma responses and depression.

Focus of the Center's Eight Laboratories. The Center has eight research laboratories which concentrate on the following areas of study: stress and arousal in individuals and groups; acoustic startle/stress physiology; sleep, stress and arousal; social function in high stress environments; neurobiology of stress; family violence and trauma; human behavioral pharmacology/physiology; and, substance abuse.

Scope of Research/Consultative Efforts. As earlier mentioned, the Center's staff serve as consultants to a large number of federal and nonfederal institutions involved with the understanding of responses to traumatic events and in the development of health policies. The Center's collaborative efforts in education and clinical research respond to the following entities: **Federal** - the U.S. Army, Navy, Air Force, and the Marine Corps of the Department of Defense; the Department of Veterans Affairs; the Department of State; the Agency for International Development; the National Aeronautics and Space Administration; the National Institute of Mental Health; the National Transportation Safety Board; and, the Peace Corps; **Private Sector** - The American Medical Association; the American Psychiatric Association; the American Red Cross; the American Psychological Association; the Montgomery County (Maryland) Schools and Police Systems and the Maryland Offices of Motor Vehicles; the Oklahoma State Department of Health; and, the Los Angeles earthquake areas; **International** - the World Health Organization (consultation to Yugoslavia); the Armenian Ministry of Health; the Singapore Armed Forces; the Disaster Stress Center of the University of Oslo, Norway; the University of Beirut, Lebanon; and, the Traumatic Stress Center of the Hadassah Medical Center, Jerusalem, Israel. Scientists from the USU Center for Traumatic Stress and their international collaborators from Norway, Israel, and Russia are performing studies at USU to better understand the individual, community, national, and international responses to traumatic events.

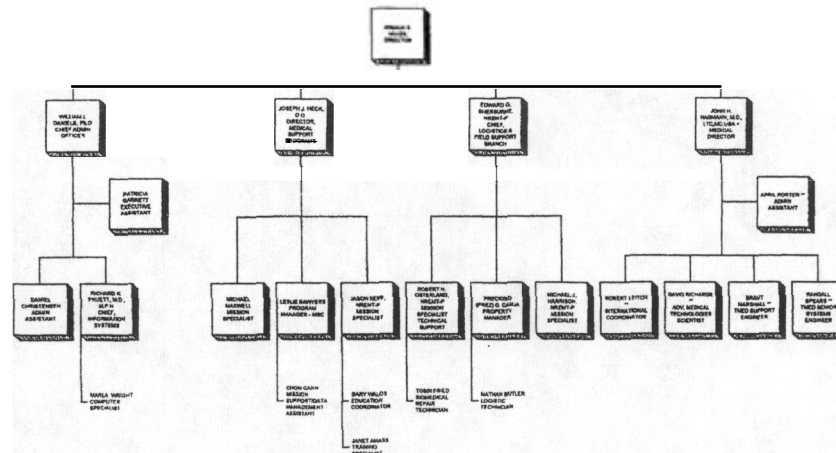
Educational Activities. Another effort of the Center is its sponsorship of two trauma and disaster-related programs: the Visiting Scientist Fellowship Program and the Military Psychiatry Fellowship Program. Graduates of these programs serve as catalysts for research, educational, and clinical programs throughout the world. Since October 1998 through 1999, the Center has hosted a total of eight visiting scientists, one each from Japan, Singapore, Greece, and Germany. The Center sponsored five seminars during 1999: 1) The Development and Involvement of Clinical Psychology Services within the Armed Services: A Singularly British Experience! (Stanley Renwick, Ph.D., Head of Defense Medical Services, Clinical Psychology, United Kingdom); 2) PTSD and Post-Traumatic Depression - Comorbid Disorders or Single Disorder (Arieh Y. Shalev, M.D., Professor and Chairman, Department of Psychiatry, Director and Founder, Center for Traumatic Stress, Hadassah University Hospital, Jerusalem, Israel); 3) A Discussion with the Professor: Post Traumatic Stress Disorder - Research and Clinical Findings (Arieh Y. Shalev, M.D., Professor and Chairman, Department of Psychiatry, Director and Founder, Center for Traumatic Stress, Hadassah University Hospital, Jerusalem, Israel); 4) Concept and Science of Debriefing (Emeritus Professor Beverley Raphael, Director, Centre for Mental Health, NSW Health Department, Sydney, Australia); and, 5) Clinical Approach to Monitoring Reactions to Traumatic Experience (Michael Feuerstein, Ph.D., Professor, Department of Medical and Clinical Psychology, USU). Drs. Norwood and Ursano presented major courses on disaster psychiatry at the 1999 American Psychiatric Association meeting in Washington, D.C. Dr. Norwood also presented on the psychological effects of weapons of mass destruction at the 1999 American Medical Association meeting.

Preservation of Lessons Learned. The health implications of traumatic stress are a focused interest immediately following each trauma or disaster, but the data tends to be lost from institutional memory because of the lack of an organized center for the maintenance and development of the resulting information. The USU Center for Traumatic Stress has served the Military Health System by capturing, organizing, and maintaining relevant information following disasters, terrorist events, and wars. Currently, the Center's basic computer data base (accessible to the Uniformed Services) provides over 13,000 items on traumatic stress.

Positioned to Respond to Future Requirements of the Military Health System. The USU Center for Traumatic Stress, with its acknowledged experts and collaborative network of national and international scientists, is positioned to continue in its response to the special needs of the Military Health System as requirements are identified in areas such as 1) adaptation, recovery, and resiliency; 2) posttraumatic psychiatric illness; 3) neurobiology of stress; 4) medical illnesses developing as a consequence of traumatic stress; and, 5) the impact of traumatic stress on the health of individual family members, family units, and organizational and community functioning.

The USU School of Medicine Department of Military and Emergency Medicine and the Casualty Care Research Center.

CASUALTY CARE RESEARCH CENTER



December 20, 1999

Establishment and Mission. The Casualty Care Research Center (CCRC) was established in July of 1989 under the USU SOM Department of Military and Emergency Medicine as a center of excellence for injury control and casualty care research. In keeping with the overall mission of USU, the CCRC activities include the following: 1) conduction of research and investigations on issues relating to injury control, casualty care, operational, and disaster medicine; 2) provision of a disciplined, educational, research experience in combat casualty care, injury epidemiology, trauma management, and related areas to medical students, graduate physicians, and other uniformed medical personnel; 3) service as a repository of resources and information relating to injury control, injury epidemiology, and operational medicine of the Uniformed Services; and, 5) provision of research, resource and educational support, technical assistance, and other community service to USU, the Uniformed Services, and other federal, state, and local elements. The Center operates entirely on extramural funding. Personnel within the USU Department of Military and Emergency Medicine participate in various activities of the CCRC based on their professional interests and as their teaching and clinical responsibilities permit. The Center's efforts fall into three categories: research, training, and consultative/operational support.

Research. Many research projects are in progress. Among them, the Naval Special Warfare Staged Combat Casualty Care Project seeks to develop a paradigm for the far-forward medical care of Navy SEALs and for the training of the Navy corpsmen who support them. Several consensus conferences have been conducted to help establish treatment approaches to special situations through a scenario-driven development and validation program.

Counter Narcotics Tactical Operations Medical Support (CONTOMS) Program. The CONTOMS Program began in 1990 as a cooperative effort between USU, the Department of Defense Office of Drug Enforcement Policy and Support, the Henry M. Jackson Foundation for the Advancement of Military Medicine, and the Department of Interior, U.S. Park Police Special Forces Branch. The Program has been continuously funded by the Office of Drug Enforcement Policy and Support, which currently reports through the Assistant Secretary of Defense for Special Operations/Low Intensity Conflict. The CONTOMS Program was created to provide advanced medical training to federal, state, and local SWAT teams. It teaches skills that reduce the risk of death or serious injury during drug raids, hostage situations, and other high risk law enforcement operations. To date, the CONTOMS Program has trained over 4,000 emergency health care providers to support law enforcement agencies from all 50 States, the District of Columbia, Guam, and Puerto Rico. **Due to its focus on special operations medicine, the CONTOMS Program, as part of the USU SOM Department of Military and Emergency Medicine's Casualty Care Research Center, is uniquely qualified to facilitate the adaptation of military medical science and experience for application in the civilian environment. At the same time, the Program's maturing relationship with the law enforcement community has resulted in the transfer of valuable knowledge, experience, and technology for military medical application.** During 1999, 10 Emergency Medical Technicians-Tactical (EMT-T) Courses and 3 Advanced Courses were provided at various sites around the continental United States. Applications to the Program continue to exceed availability and many agencies require CONTOMS certification for entry level personnel. More than 614 law enforcement personnel were trained during 1999. The CCRC, through the CONTOMS Program maintains the only national database on SWAT injuries. This information is used to guide the educational components of the CONTOMS Program and to explore similarities and differences between the experiences of the civilian law enforcement communities and the military special operations forces. The Department of Defense utilizes the data derived from the CONTOMS Programs to explore the epidemiology of injury and the impact of various medical interventions. For example, during 1996, these collaborative efforts led to a significant change/enhancement in the training programs for the Navy SEALs.

The CONTOMS Program has received the endorsement of and/or continuing medical education credit from: the National Tactical Officers Association (NTOA); the National Association of Emergency Medical Technicians (NAEMT); and, the Continuing Education Coordinating Board for Emergency Medical Service (CECBEMS).

Training. The CONTOMS Program is the Center's largest training effort. It has gained international interest and a sister-program has been initiated by Britain's Home Office. In response to increased requirements, the Advanced Course was initiated in 1997. This 32-hour program addresses the advanced topics that are important to the practicing SWAT medic. In response to requirements from the law enforcement community, the Center introduced its Chemical-Biological Terrorism Awareness Course in 1995. Since that time, the eight-hour course has been taught regularly at training sites around the country. The Operational and Emergency Medical Skills Course, as previously mentioned in this report, is taught three times each year and focuses on the extended care of trauma patients beyond the first six hours. The participants include medical students, graduate physicians, special operations medics from all of the Services, and selected federal law enforcement medics.

The Wound Data and Munitions Effectiveness Team (Vietnam) Database (WDMET) - A Unique Resource. The Wound Data and Munitions Effectiveness Team (Vietnam) database (WDMET) is maintained by the CCRC. It contains information on the tactical engagement, weapons employed,

resulting injuries, and treatment in the pre-hospital and hospital environments on approximately 8,000 combat casualties. It is the ONLY collection of its kind in the world. Photographs, medical records, X-rays, recovered bullets and fragments make this a unique resource that has been studied extensively, resulting in approximately 25 scholarly publications since the Center was established in 1989.

CCRC Mission Support Center - Consultative Support. In agreement with the philosophy that teachers and scholars must maintain an active practice in their areas of expertise to ensure competency, the Center provides consultation and support to multiple organizations, including many federal law enforcement agencies. These activities are carried out under specific Memoranda of Understanding. On the average, the CCRC responds to at least one request for support each day. The CCRC's Mission Support Center is staffed by specially trained personnel and provides medical consultation, planning, and threat assessment support on a round-the-clock basis.

Telemedicine Sustainment Project. The Telemedicine Sustainment Project began during September of 1996. Under this project, the CCRC is tasked to provide: 1) telemedicine training for both primary care and supporting hospital elements of the U.S. deployments in Bosnia; 2) in-theater clinical and technical continuation training; 3) telemedicine training and first-line technical support for the U.S. contingency of the United Nations' Force in Macedonia; 4) clinical advice and telemedicine needs assessments world-wide at the direction of the Telemedicine Research Laboratory; and, 5) maintenance and updating of the "Telemedicine Yellow Pages." CCRC has provided eleven deployed Telemedicine Courses in Germany, Bosnia, the continental United States, and Kuwait. Both clinical training and technical support were provided to Bosnia and Macedonia and technical support was provided to Saudi Arabia. The Telemedicine Yellow Pages were updated and digitized throughout 1999.

The USU SOM Department of Preventive Medicine and Biometrics and the Centers for Preventive Medicine and Public Health.

One of Seven Accredited Resources. The USU SOM Department of Preventive Medicine and Biometrics (PMB) has the distinction of being one of only seven accredited resources approved for course work in tropical medicine in the United States. During 1997, PMB continued its collaborative education agreements with the Walter Reed Army Medical Center Internal Medicine Fellowship Program, the Army Program in Health Services Administration, the Army/USPHS Laboratory Animal Medicine Program, the Navy Dental Research Institute and the Indian Health Service.

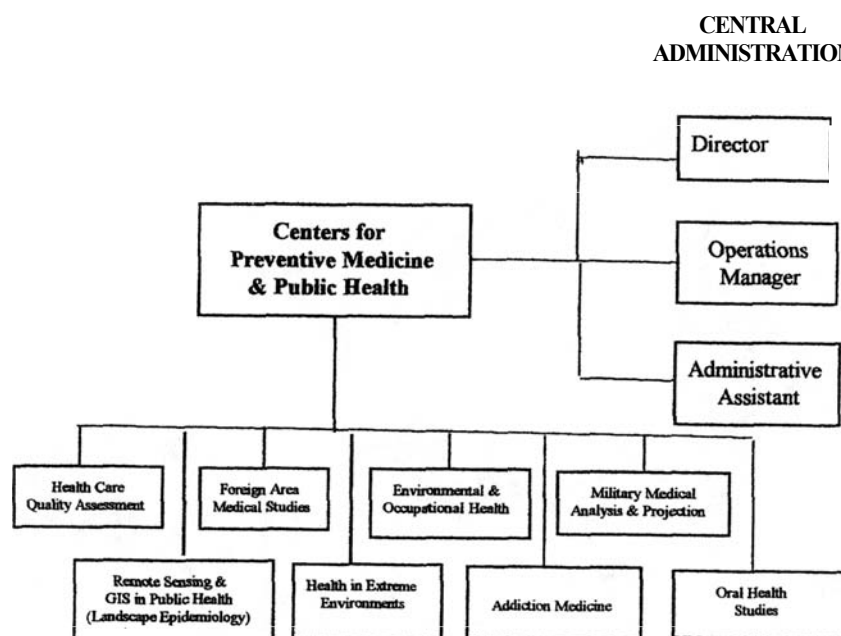
Graduate Education in Preventive Medicine. Public Health Graduate Education Programs are offered through the USU-SOM Graduate Education Program. A total of 300 individuals have graduated from the Master of Public Health (MPH) Program, the Master of Tropical Medicine and Hygiene (MTM&H) Program has graduated a total of 24 personnel since its establishment. PMB also offers residency training programs in occupational medicine and preventive medicine.

The recently established Master of Science in Public Health (MSPH) will graduate its first two degree candidates in the Spring of 2000. The MSPH Program is a two-year program designed for the non-physician practitioner planning a career in preventive medicine and for individuals who desire a more intense, in-depth examination of a specialty track than is accomplished in a one-year Master of Public Health Program. This program has also been expanded from two specialty areas (Environmental Health and Industrial Hygiene) to four specialty areas by the addition of health physics and medical entomology. Additional military students are expected to start the program during the Fall of 2000.

Responsiveness to the Special Needs of the TriServices. In response to the request of the Military Health System, the TriService Advanced Military Tropical Medicine Course was offered at USU during the summer starting in 1996 through the summer of 1999. Under the auspices of the USUHS-SOM Department of Preventive Medicine and Biometrics, Department of Defense personnel receive education and training in tropical infectious diseases, which is an integral part of medical readiness training for foreign military operations. The Military Tropical Medicine Course was held from July 6 through August 14, 1999. Seventy-one military medical officer students were trained in operational military medicine, consisting of four weeks of didactic lectures and laboratories in advanced diagnosis and treatment of tropical diseases. Sixty-seven lecturers provided 130 hours of didactic instruction. There were ten parasitology, bacteriology and virology laboratories; one medical entomology laboratory; and, one outbreak investigation laboratory taught by seven Ph.D. instructors. Forty-six military medical officer students went on a total of seven field mission sites overseas with sixteen staff members. They were able to observe, examine, diagnose and treat patients with tropical diseases within their endemic environments.

Centers for Preventive Medicine and Public Health. The Centers for Preventive Medicine and Public Health (CPMPH) are found within the USU-SOM Department of Preventive Medicine and Biometrics. The Centers operate under terms of a Memorandum of Understanding with the Henry M. Jackson Foundation for the Advancement of Military Medicine. The CPM/PH combines broad expertise in research, consultation, education, training, and clinical preventive medicine and public health, to develop data bases and analytic methodologies, prepare innovative curricula, and evaluate processes and

outcomes in clinical practices. The following six Centers provided consultative and educational services to the TriServices during 1999: 1) the Center for Health Care Quality Assessment and Improvement; 2) the Center for Landscape Epidemiology; 3) the Center for Foreign Area Medical Studies; 4) the Center for Health in Extreme Environments; 5) the Center for Training and Education in Addiction Medicine; and, 6) the Center for Environmental and Occupational Health.



Health Policies and Service. The six Centers serve program managers and policy makers in the Department of Defense, other federal agencies, local governments, and private organizations concerned with health policies and services. The Centers coordinate the resources of multiple separate centers of excellence to ensure that the appropriate collective expertise is applied. The CPM/PH enhances the stability and long-term effectiveness of USU and the Defense Health Program by attracting, retaining, and providing for the professional growth of outstanding faculty and staff, by providing high quality educational experiences to its students, and by promoting excellence in clinical preventive medicine and public health.

Examples of Research/Consultative Efforts.

The Center for Foreign Area Medical Studies. A National Institutes of Health/Fogarty Grant, International Training and Research in Emerging Infectious Diseases, amounting to more than \$800,000 entered its third year with an outstanding record for both field and bench training of foreign scientists. The program objective is to strengthen the capacity of national and international scientists to more effectively identify, understand, and respond to outbreaks of emerging and re-emerging infectious diseases. This program will provide training at the foreign sites through workshops in field epidemiology, laboratory

diagnosis, and molecular epidemiology; and post-doctoral training programs in molecular biology and pathogenesis. Research areas of focus are Bartonellosis in Peru and malaria in Brazil and Belize. Bartonellosis is a highly fatal epidemic and endemic infectious disease that occurs throughout the medically underserved communities of the Andes Mountains in South America. A major new expansion effort has been initiated by the Center in the research of emerging diseases, entitled "Epidemiology of Bartonellosis in South America." The objective of this research is to define the mechanisms of disease transmission in endemic and epidemic populations. Knowledge of these mechanisms will support the long-range goal of the development and implementation of feasible community-based disease control programs.

- The Center for Environmental and Occupational Health.

Lieutenant Commander Philip A. Smith, MSC, USN, Assistant Professor and Lieutenant Colonel Arthur P. Lee, Ph.D., MSC, USA, Assistant Professor, Department of Preventive Medicine and Biometrics, are leading research that addresses the need in operational settings to rapidly detect a wide range of chemicals with potential adverse health effects for exposed military personnel. Solvating gas chromatography (SGC) has characteristics of both supercritical fluid chromatography and gas chromatography, which combined provide a system with characteristics approaching a "universal chromatograph" capable of analyzing many classes of compounds on a single instrument. Research is ongoing utilizing this technology in developing sampling and analysis methods to assess exposure to environmental organic contaminants. Current research efforts have included a project to rapidly separate nitroaromatic compounds found in explosives using a new, chromatographic instrumental method, with a test mixture of 8 nitroaromatic compounds, separation took less than 30 seconds. Work is commencing on the use of the same chromatographic method and supercritical fluid extraction to provide a rapid, unified sampling/analysis system for high concern chemical compounds as water contaminants and for the rapid separation of chemical warfare compounds. **Such capability will significantly advance the ability of military commanders to detect chemical agents rapidly and accurately, protecting the health of military personnel.** Current research also includes efforts to identify and evaluate the toxicity of organic air contaminants encountered with the use of not control agents used in military and law enforcement settings.

Robert J. Fitz, Jr., MPH, MSPH, Assistant Professor and Lieutenant Colonel Arthur P. Lee, Ph.D., MSC, USA, Assistant Professor, Department of Preventive Medicine and Biometrics, initiated the Center for Health Promotion and Preventive Medicine (CHPPM) Risk, Hazard, and Information Management Grant in July of 1995, with completion scheduled for September of 2000. The grant consists of nine separate research initiatives: health risk assessment; health promotion; health hazard assessment; occupational and environmental medicine; environmental compliance and pollution prevention; medical entomology; radiation protection; preventive medicine readiness planning; and, preventive medicine planning and integration. For each part, the five research tasks to be accomplished are: conduct a program assessment; develop alternative program change methodologies; develop measures of merit to evaluate alternative methodologies; implement and evaluate the selected methodology; and, publish results. The research program is currently funded at \$17.7 million. By mid-1999, program researchers had collaborated on two articles published in scientific journals, submitted four others, had eleven conference presentations, prepared over 35 technical reports, and had an additional three articles in preparation for the scientific literature.

Welford C. Roberts, Ph.D., Assistant Professor and Roy D. Miller, Ph.D., Assistant Professor, Department of Preventive Medicine and Biometrics, are continuing their work in support of the Indian Health Service (IHS) in the areas of environmental assessment and policy development. A hazardous materials/hazardous waste management plan for health care facilities in the IHS has been developed and a draft manual published. Training workshops in the use of the resource material have been conducted at three IHS health care facilities, with completion of training at the remaining sites scheduled during 2000. An environmental health policy study has been initiated to focus on how IHS interacts with other Federal agencies. Initial work will focus on selected interviews with Federal agencies and Tribal representatives, plus a review of literature. Also, technical information is being assembled to assist personnel in leveraging resources of various agencies.

USU School of Medicine Department of Surgery and the Center for Prostate Disease Research - A TriService Effort.

Background. Cancer molecular biologists in the Department of Surgery's Center for Prostate Disease Research (CPDR), in conjunction with the expertise and contributions of urologists at the Walter Reed Army Medical Center, notably, **Colonel David G. McLeod, USU Professor of Surgery**, and genito-urinary pathologists from the Armed Forces Institute of Pathology, are unraveling the mysteries of prostate cancer. Congress established the CPDR in 1991, and USU conducts the Department of Defense program in collaboration with the Henry M. Jackson Foundation for the Advancement of Military Medicine. The CPDR, under the leadership of **Lieutenant Colonel (P) Judd W. Moul, MC, USA, Associate Professor of Surgery**, focuses on identifying genetic prognostic markers that will help physicians determine the best treatment strategy for individual patients. The CPDR is also developing new molecular treatment strategies for prostate disease and is creating a multicenter database of the prostate cancer patients in the Defense Health System. The three main areas of research are genetic alterations/novel gene discovery, androgen regulation of the prostate growth, and preclinical strategies for gene therapy.

Predicting whether or not prostate cancer is likely to recur after radical prostatectomy (surgical removal of the prostate gland) has become more precise due to a new biostatistical model developed by CPDR researchers. Results of their study were published in the March 1998 edition of the Journal of Urology. The model can easily be programmed into commonly used computer-based software, so that the variables can be entered and automated risk of recurrence calculated for the individual patient immediately after the surgical pathological results are known. This allows patients at high risk for recurrence to be identified shortly after surgery. The biostatistical model is currently used at the Walter Reed Army Medical Center (WRAMC). Urologists there have access to the equation on the hospital's computer network. A patient's odds of recurrence may be determined by simply entering variables into the computer. WRAMC physicians then use the results to more accurately counsel patients on their treatment options.

In the lead article of the April 1999 edition of the Journal of Urology, CPDR study results were published describing a new, experimental technique to detect prostate cancer cells in the bone marrow of patients. The new technique, RT-PCR (reverse transcriptase polymerase chain reaction), may help predict the early recurrence of prostate cancer. The RT-PCR assay for prostate specific antigen (PSA) is a mechanism to fingerprint cells that are circulating in the blood or bone marrow that have originated in the prostate - resulting in either a positive or negative RT-PCR reading. The results of the study are significant: the two-year disease-free survival rate was nearly 97 percent in RT-PCR negative patients compared with only 75 percent in RT-PCR positive patients. The results of this study indicate that with further research and refinement, the RT-PCR technology could have broad implications for the successful monitoring and treatment of men with all stages of prostate cancer.

CPDR Opens New Center in 1999. During mid-1999, the DoD opened its new Center for Prostate Disease Research in Rockville, Maryland. The new Center will combine the efforts of 13 military prostate cancer sites to advance groundbreaking research and treatments for the disease that kills nearly 40,000 men and afflicts 175,000 annually, according to the American Cancer Society.

The Director of the new Center is **Lieutenant Colonel (P) Judd Moul, MC, USA, Associate Professor, SOM Department of Surgery**. The new center houses basic research and molecular biology

labs, is equipped with a prostate research library, has DNA, RNA, cell, serum, and tumor tissue banks, and encompasses a comprehensive prostate cancer patient data base. **Colonel David G. McLeod, MC, USA, Chief of Urology, Walter Reed Army Medical Center**, points out that the program is truly a TriService effort. The unique combination of the clinical center and laboratory research are vital to the overall success of prostate disease research. CPDR centers have increased as the need for more laboratory and research space has grown. None of these facilities is exclusively dedicated to prostate cancer, however, and their scattered locations make collaboration difficult. Consequently, DoD, the Henry M. Jackson Foundation, and USU established the freestanding center in Rockville, Maryland, to expand basic and clinical research space and allow researchers to work collaboratively. On any given day, a urologist, a pathologist, and a molecular biologist can now work on a project side-by-side because they are all located in the same building. DoD wanted to build a strong, central core site that would serve as an umbrella to the other CPDRs which house smaller activities. A large research activity of the Center continues to add to the collection of clinical information on men newly diagnosed with prostate cancer; this data base is currently composed of nearly 11,000 registries including those gathered retrospectively back to the 1980. The Center has been fitted with state-of-the-art equipment, including a laser capture microscope, the only one in the country that combines a laser beam with a microscope to extract close-to-individual cancer cells from a prostate gland.

The New Interdisciplinary Graduate Program in Emerging Infectious Diseases.

Background. In August, 1999, the USU Board of Regents gave its final approval to a Graduate Program in Emerging Infectious Diseases (EID). This program is designed for both military and civilian applicants who wish to pursue a program of study leading to the Ph.D. degree in one of the academic tracks within the interdisciplinary field of Emerging Infectious Diseases. The EID Program was created for students who are primarily interested in the pathogenesis, host response, and epidemiology of infectious diseases. In addition, this Program provides an opportunity for military pediatric and adult Infectious Diseases Fellows to complete the research components of their Fellowships in Infectious Diseases. With the addition of this Program, the SOM has increased its capacity and commitment to instruct students in the biology of infectious diseases, especially in the areas of interest to military medicine.

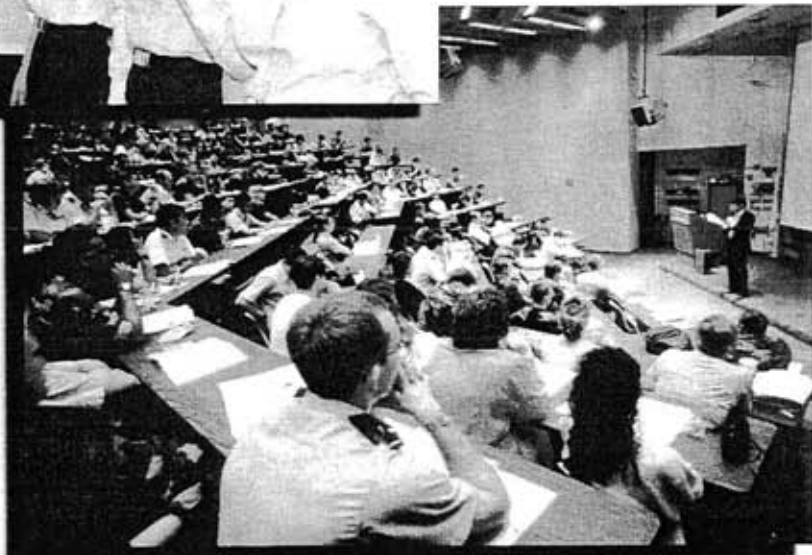
The faculty of the EID Program are primarily full-time members of the Departments of Microbiology and Immunology, Pathology, Preventive Medicine and Biometrics, Pediatrics, and Medicine. In addition, faculty from other SOM Departments in the University who share an interest in infectious diseases at the molecular and cellular level are also included.

Selection of the EID Program Director - Eleanor S. Metcalf, Ph.D., Professor of Microbiology and Immunology. In September of 1999, **Eleanor S. Metcalf, Ph.D., Professor of Microbiology and Immunology**, was selected to be the EID Program Director. Even though the academic year had already begun, the EID Program immediately offered its first new course: "Fundamentals in the Pathology of Infectious Diseases." With the cooperation of the Pathology Department, this new course was added to the curriculum as a tutorial; next year, the curriculum will be more formal. In addition, a Program-unique, four-Quarter Course began in the 1999 - 2000 Academic Year. This course, entitled, "Models of Emerging Infectious Diseases," currently has ten students enrolled, approximately 50 percent of whom are military officers enrolled in the MPH program or are Pediatric Infectious Disease Fellows. This course was organized by civilian and military faculty within the EID Program, as well as the Director of the Pediatric Infectious Diseases Fellowship Program.

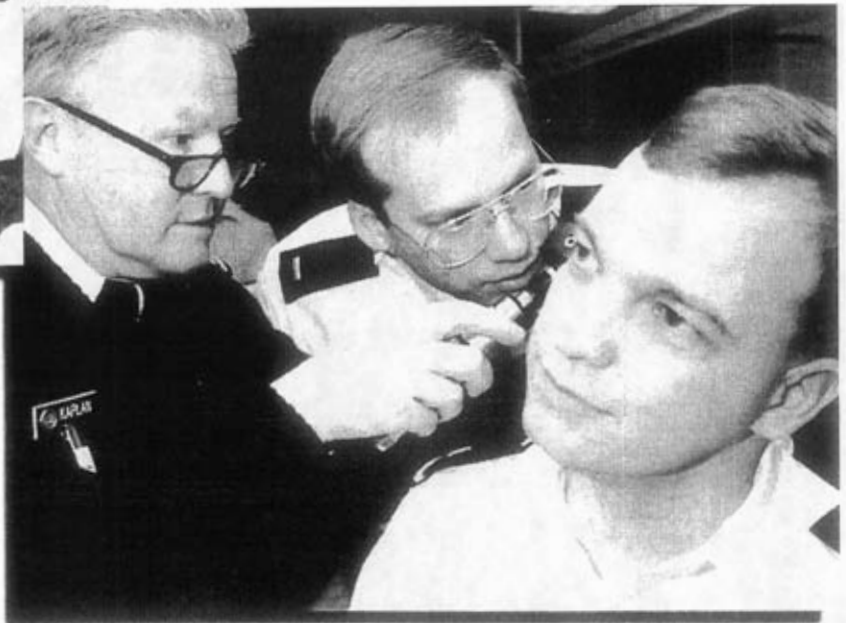
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The EID Program Recognizes the Extent to which Advances in these Areas Can Affect the Current and Future Health of Individuals Throughout the Military Health System. The Emerging Infectious Diseases Program will also serve as an opportunity for the facilitation of educational and scientific interactions between students and faculty at USUHS who share common interests in the contemporary approaches to the study of the molecular biology, pathogenesis, and host responses within the context of emerging infectious diseases. The establishment of this Program at USU formally recognizes the breadth of disciplines spanned by Emerging Infectious Diseases and the extent to which advances in these areas can affect the current and future health of individuals within the United States and also in the global arena. The implementation of an interdisciplinary and interdepartmental program in Emerging Infectious Diseases will also broaden and enhance the overall educational objectives of USU and bring together faculty and students in a scientific community designed to stimulate and promote collaborative interactions.

Retention







III. THE GRADUATE SCHOOL OF NURSING

ESTABLISHMENT

Legislative and DoD Direction. The establishing legislation of the University, the Uniformed Services Health Professions Revitalization Act of 1972 (Public Law 92-426), and DoD Directive 5105.45, both **direct that USU must meet the requirements of medical readiness and expand to meet the future needs of the Uniformed Services.** In accordance with those directives, the Graduate School of Nursing (GSN) was established at USU. During the Fall of 1992, the Department of Defense received the authority, along with an appropriation, to begin planning for the implementation of a nurse practitioner education program at USU. The intent of the legislation was to meet the needs for advanced practice nurses in the Uniformed Services (the Army, Navy, Air Force, and the U.S. Public Health Service). The Federal Nursing Chiefs initially identified the need for advanced practice nurses in two areas: Family Nurse Practitioner and Nurse Anesthesia. (The Federal Nursing Chiefs include representatives from the Army, Navy, Air Force, Public Health Service, and the Department of Veterans Affairs. The American Red Cross, although not a federal agency, has an honorary representative on the Federal Nursing Advisory Council. The Federal Nursing Advisory Council for the GSN was organized in 1993 to provide a means for the easy exchange of information and mutual assistance in the consideration of nursing issues and challenges.)

GSN Meets Legislative and DoD Mandates. In 1993, Congress directed the initiation of a demonstration program for the preparation of family nurse practitioners for the Uniformed Services. In compliance, the Family Nurse Practitioner (FNP) Program admitted its first students in August of 1993. The Nurse Anesthesia (NA) Program (identified as a requirement by the Federal Nursing Chiefs) admitted students in June of 1994. The GSN's two programs, the Family Nurse Practitioner and the Certified Registered Nurse Anesthesia Programs, are designed to alleviate shortages of health care providers in the Uniformed Services, as identified by the Federal Nursing Chiefs. The Federal Nursing Chiefs have determined that these two advanced practice nurse specialties currently meet the requirements of the Uniformed Services. On February 26, 1996, the GSN received official approval from the Office of the Assistant Secretary of Defense.

Graduates from the GSN receive a Master of Science in Nursing (MSN) Degree and qualify to test for certification in their specialties. The Family Nurse Practitioner Program has had five graduating classes from 1995 through 1999, for a total of 40 graduates; the Nurse Anesthesia Program has had four graduating classes beginning with the Class of 1996 through the Class of 1999 for a total of 56 graduates. **Since its first graduation in 1995, a total of 96 advanced practice nurses have graduated from USU; all are certified; and, all but one remain on active duty.**

MISSION

"As I begin my graduate studies for the degree of Master of Science in Nursing, I dedicate myself to the scholarly pursuits that will enable me to become an advanced practice nurse. ... As an advanced practice nurse, I will endeavor to create an environment of caring for my patients and clients and at all times provide comprehensive nursing care to them and the families entrusted to me."

From the Oath taken by each new class of students at the GSN; the oath was developed by the Dean and Faculty of the GSN.

Mission Direction. The Mission Statement for the GSN is derived from the overall Mission Statement of the University and is in compliance with DoD Directive 5105.45. The mission of the GSN includes five major themes: 1) the GSN is dedicated to providing quality education to prepare advanced practice nurses, at the graduate level, in the specialties of Family Nurse Practitioner and Nurse Anesthesia; 2) the GSN must produce graduates who are both qualified for, and dedicated to, the delivery of primary care (acute and chronic care), including anesthesia services, to active duty members of the Uniformed Services, their families, and all other eligible beneficiaries during peace, war and other contingencies; 3) the GSN is also directed to provide the Nation with graduate nursing professionals who are willing to commit themselves to a career of service in the Department of Defense and the United States Public Health Service; 4) the GSN must serve the Uniformed Services and the Nation as an innovative, responsive program with a world-wide perspective for leadership, education, research, and service; 5) the GSN must develop advanced practice nurses, with unique experience and skills, who can respond to the special requirements of the Uniformed Services for disaster relief, humanitarian intervention, and military readiness.

Mission Accomplishment. In the short time since 1993, and with the strong cooperation and support of the Federal Nursing Chiefs, the GSN has: 1) recruited a qualified faculty; 2) successfully established curricula for two programs; 3) identified accredited clinical practice sites and completed memoranda of understanding for those relationships with 17 military treatment facilities; 4) developed and implemented an administrative structure that provides for faculty and student participation in the overall governance of the GSN; 5) submitted self-studies and received accreditation for its two programs from three professional accrediting entities; 6) received approval from Health Affairs, Office of the Secretary of Defense, on February 26, 1996; 7) initiated, implemented, and continuously reviewed the outcomes evaluation process for both academic programs; 8) initiated curricula and governance reviews; 9) collaborated with the Department of Veterans Affairs and utilized new technology to establish distance learning programs which resulted in DoD's first virtual graduation at the advanced level; and, 10) graduated 96 advanced practice nurses, all of whom have passed their certification examinations, with 95 graduates remaining on active duty.

GSN Nursing Philosophy. The philosophy of the GSN conforms with the mission and goals of the USU Strategic Plan. The philosophy is built on a foundation of nursing theory, research, and advanced practice that fosters critical thinking and a vision for the future health care requirements of the Uniformed Services. The GSN community believes that graduate nursing education builds on the foundation of the undergraduate nursing education already completed by the uniformed students. With that in mind, the GSN must provide the Nation with nurses prepared at the Master's level, who possess learning experiences that will increase the breadth and depth of their knowledge base and enable them to specifically address the special needs of uniformed health care. The GSN prepares its students for collaborative and autonomous advanced practice roles with an emphasis on: health promotion and disease prevention (readiness); management and delivery of primary health care to families and individuals across the life span; case management for the chronically and stable acutely ill; anesthesia service; administration; and, unique expertise in emergency preparedness and military medical/nursing humanitarian assistance. Also, GSN students must be provided with an advanced level of competence to perform and provide leadership as uniformed officers in a joint service environment. And finally, GSN graduates should be prepared to participate in research or studies that will advance the Uniformed Health Profession and improve the practice of nursing as well as the welfare of patients throughout the Uniformed Health Systems.

ACCREDITATION

National League for Nursing Accreditation. In December of 1996, the Board of Review for Baccalaureate and Higher Degree Programs evaluated, for the National League for Nursing (NLN) accreditation, the Master's Degree Program offered by the USU GSN. **The NLN Board of Review voted to grant accreditation to the USU GSN Master's Degree Program in Nursing** and scheduled its next visit for reaccreditation for the Fall of 2001. The GSN has begun the preparation for its required Self-Study during 2000.

Accreditation Granted by the Council on Accreditation of Nurse Anesthesia Educational Programs. Of the two GSN programs, only the Nurse Anesthesia Program requires accreditation by a separate accrediting agency in addition to the National League for Nursing Accreditation. In April of 1994, the GSN Certified Registered Nurse Anesthesia (CRNA) Program was granted initial accreditation by the Council on Accreditation of Nurse Anesthesia Educational Programs (COA), permitting the admission of students to the GSN NA Program. Following an intensive review and site visit by the COA in October of 1997, the GSN Nurse Anesthesia Program received full accreditation through September of 2003.

Preliminary Accreditation Granted by the American Association of Colleges of Nursing. An accreditation program for nursing programs has recently been implemented by the American Association of Colleges of Nursing (AACN) Commission on Collegiate Nursing Education (CCNE). The GSN prepared and submitted material to meet the CCNE requirements for preliminary accreditation (a special

accreditation for programs that have already received recent national accreditation from other organizations such as the NLN). That material was accepted and **the AACN/CCNE granted preliminary accreditation on February 27, 1998.** A site visit by the AACN is scheduled in the Fall of 2001.

Sponsorship for the Honor Society of Nursing is Granted. Also during Fiscal Year 1998, the USU Graduate School of Nursing was informed that it has been approved by Sigma Theta Tau to sponsor an Honor Society of Nursing. The Honor Society was formally established during graduation exercises in 1999, and an official charter will be approved in 2000.

MILITARY UNIQUE CURRICULUM

The GSN Curriculum Responds to the Special Needs of the Uniformed Services. The USU GSN is unique among the Nation's nursing programs because it must educate students to treat and care for both civilian and military personnel, in peace, war, disaster, or other situations that occur under austere conditions. The GSN curricula are driven by special requirements to meet the missions of the DoD and the USPHS. Common to the GSN academic curriculum is subject matter that is relevant to military health care providers; for example, **there are operational readiness components to each course.** Continuous consultation has taken place with the Federal Nursing Chiefs during the on-going development and review of the GSN curricula in order to assure that the special needs of the Uniformed Services are being met by the GSN graduates. In concurrence with the Federal Nursing Chiefs' initial indications that the career advancement of their officers would be enhanced through the completion of a Master's thesis, the GSN examined the feasibility of the completion of a thesis within the time constraints of its programs. Based on the assessment of multiple program components, including an assessment of the graduating students' research projects and faculty expertise, a Master's thesis, which would become an extension of the charter students' research projects, was made a requirement for all graduating students, beginning with the graduating Class of 1996. After consultation with the Federal Nursing Chiefs during 1999, it has been decided that the GSN students may now choose among several types of scholarly projects that include: research culminating in either a written thesis or a publishable paper; a research practicum; and/or a defined project. Whichever option is chosen, any scholarly project can be done individually or in a group. A GSN research committee will determine that each scholarly project meets the Uniformed Services University of the Health Sciences requirements for a Master of Science Degree. Another example of responding to the Services occurred when the 1995 GSN graduates and their uniformed supervisors recommended the inclusion of training in the procedures for such requirements as suturing, basic laboratory testing, and triage. The GSN faculty agreed and those procedures have been incorporated into the appropriate GSN courses. The FNP graduates also recommended the addition of Anatomy into the curriculum; that occurred during 1999.

Advanced Nursing Education in a Joint Service Environment.

GSN Students are provided military unique education in the joint service environment of the University which includes the Army, Navy, Air Force, and the United States Public Health Service (USPHS). Graduates are prepared to deliver care in a wide variety of settings and communities, both nationally and internationally. GSN graduates are equipped to contribute to the Uniformed Services' peacetime health care delivery systems and to provide military and public health support during combat operations, civil disasters, and humanitarian missions. They may serve in clinics, hospitals, and in the combat zone of a theater of operations under austere and harsh conditions, at sea on ships of war, or in isolated areas of the United States and other countries lacking in health care providers. The major emphasis is on the nursing perspective of health promotion and disease prevention within the context of primary care in the uniformed health care systems as determined by the Federal Nursing Chiefs.

The GSN faculty and staff believe that the placement of the GSN within the interdisciplinary boundaries of the University is a distinct strength. **The Quad Service environment of the USU offers a unique blend of interactive didactic and clinical experiences which support the preparation of competent advanced practice nurses for service to the Nation during international conflict, in peacetime, and wherever humanitarian services and support for disaster relief are required.** Clinical practice sites include 17 military treatment centers and numerous civilian hospitals and primary care health care clinics located primarily in the Washington, D.C. area. **Recognizing the unique environment at the University, in 1997, the Air Force assigned all of the Air Force students who are approved for training as nurse anesthetists to the GSN at USU.**

GSN Students Understand the Structure of a Joint Environment. To meet the Military Health System (MHS) readiness requirements, it is essential that professional health care officers are familiar with the structure of a joint environment. Under the leadership of the USU Brigade Commander, the uniformed students, faculty, and staff assigned and reporting to the GSN must participate in all activities and events as they would in any other command of the Uniformed Services. Regular military formations are held; physical fitness exercises, standards, and testing are adhered to; performance evaluations are completed; and, uniformed personnel in the GSN are trained in the appropriate uniformed programs and customs. **The students of the GSN participate in joint-service educational experiences throughout their Master's Degree Programs and, as a result, become familiar with the regulations, procedures, and vocabularies of the Quad Services' health care programs.**

Medical Readiness Training. The 64 uniformed officers currently enrolled on campus in the GSN (30 in the Family Nurse Practitioner Program; 6 in the Post Master's Practitioner Program; and, 28 in the Nurse Anesthesia Program) receive operational medicine and military relevant material and training in their academic courses throughout the curriculum. The 64 commissioned officers represent the Services as follows: 18 Army; 4 Navy; 36 Air Force; and, 6 Public Health Service). There is also a one-week, Operational Readiness Course that is totally devoted to readiness-related issues and associated clinical problems. In April and September of 2000, students will complete a two-day course on deployment conditions in advanced practice nursing. With the approval of the Federal Nursing Chiefs, beginning in 2001, GSN will participate in Operation Bushmaster as part of the Operational Readiness Course with

selected GSN students; a model will be developed. The GSN has a Commandant who is rated by the USU Brigade Commander. The GSN Commandant provides mentorship and guidance related to leadership, military customs and traditions, administrative requirements, and protocols to all of the uniformed officers enrolled in the GSN.

STUDENT AFFAIRS

"I was honored to have been selected to the Family Nurse Practitioner Program of the Graduate School of Nursing. at the Uniformed Services University of the Health Sciences, but did not know what to expect. Now, after being accepted to the school and having completed my first year, I know this was the right choice for me because of the atmosphere, the curriculum, and the focus on continuing my role as a military officer."

Captain Sandra McNaughton, USA, NC, quoted from her article, "So You're Thinking About USUHS," in the July 1999 issue of the Army Nurse Corps Newsletter.

The Selection Process. A commitment to the Nation must be evidenced in an applicant's decision select and approve candidates for application to the GSN according to Service specific criteria. Once applicants have been selected by their specific Service, they may then apply to the GSN. **The Admissions Committee of the GSN reviews the applicants' records not only on the basis of academic merit which shows that the applicants can succeed in a graduate program, but also on the basis of officership and commitment to their particular Uniformed Service.** Academic aptitude is balanced against the evidence of future officership and continuing commitment to service in the Uniformed Services. The candidates nominated and selected by the Uniformed Services have had a grade point average of between 3.8 and 4.0 in their Baccalaureate Programs; they have also had an average of between eight to twelve years of experience in the Uniformed Services. Annually, the GSN reviews approximately 75 applicants and admits between 25 to 37 students per year. The Federal Nursing Chiefs have continued to demonstrate their tremendous support for the GSN by sending exceptional students to the University.

Class of 2001. The USU GSN welcomed the Class of 2001, 32 active duty officers, during June of 1999. Seventeen officers were enrolled in the Nurse Practitioner Program Class of 2001, bringing the enrollment of the two FNP classes, First and Second Year, to a total of 30 students. Fifteen uniformed officers were enrolled in the Nurse Anesthesia Program Class of 2001, bringing the enrollment of the two NA classes (First and Second Year) to a total of 28 students.

Of the 32 uniformed officers newly enrolled as First Year GSN students: seven are members of the Army; two are members of the Navy; twenty are members of the Air Force; and, three are members of the Public Health Service. The GSN students range in grade from 0-2 to 0-5 with the majority at the 0-3 level. The students will pay back two to three years for each year of education received at the GSN, depending upon their individual Service.

During June of 1999, the GSN also enrolled five commissioned officers in a resident, one-year, Post-Master's FNP Program to retrain advanced practice nurses in a specialty required by the Services. One additional student joined the program in January of 2000.

Development and Functions of the Student Advisory Council - A Strong Avenue of Communication.

Background. Beginning in October of 1998 and continuing throughout 1999, the GSN students, faculty, and staff, in coordination with the Federal Nursing Chiefs and the Office of Student Affairs, School of Medicine, worked to develop and implement a Student Advisory Council. The Student Advisory Council was initially established during 1998 to advise the Dean, GSN, on matters of student interest and concern. It provides an active and visible means for the student body to communicate directly with the Dean. The Student Advisory Council (SAC) is an independent entity that exists to represent the GSN student body; it is not considered an element of the military rating chain, nor an extension of the administration. It serves as a line of communication between the student body and the administration of the GSN. The Council is designed to discuss student issues that arise across class boundaries and to provide a student body consensus which may then be communicated to the Dean, GSN, and other responsible school officials. The Council also serves to facilitate the transfer of information on matters or problems common to each student class or group.

Composition. The GSN Student Advisory Council consists of the president and two academic representatives from each nursing class (class officers represent both FNP and NA Programs for each year). Each class elects its academic representatives at the beginning of the Academic Year (class officers, in this case the president of each class, normally serve until graduation). Thus the Council is composed of six student representatives, three from each class, all of whom are voting members. In addition, the Dean, GSN, may appoint two graduates, one from each program, who will represent the GSN alumni, but are not voting members. The Dean also appoints an advisor to guide and assist the Council; however, the advisor may not be in the military rating chain and must hold a relatively neutral faculty or staff position. The faculty advisor may be chosen from the GSN, the School of Medicine, or another area within the University.

Functions of the Council. The Student Advisory Council meets every eight weeks during the academic year, or as required. Approval of any issue discussed at a meeting requires a majority vote of the attending members. Matters discussed and decided by vote at the SAC are binding and represent the "official" student position in discussions with the faculty and administrative officials of the GSN. The Chair of the SAC will be the second year class president (who represents both the FNP and NA Programs). The chair prepares meeting agendas from input provided by other SAC members, conducts the meetings, and coordinates discussions and votes to establish a consensus of the student body. The representatives of each class are the advocates for their student classes and serve as a conduit for class members to bring their issues and concerns to the SAC.

The academic representatives advocate for students in academic matters; they serve as a liaison between the students and the academic departments and as the communication link for such things as changes in the academic schedules, rooms, etc. The academic representatives are also responsible for writing an After Action Report at the conclusion of each term and the Academic Year; the report summarizes student comments and feedback about each course within the two programs and serves as a valuable assessment tool for the Department Chairs. Again, this report serves as an excellent tool for curriculum review and assessment processes.

The SAC Faculty Advisor assists and advises each class on the functions and responsibilities of the SAC, and works with the GSN Commandant to ensure that class elections of officers and academic representatives are elected by July 30 of each academic year.

In summary, the SAC has been established to ensure that lines of communication and trust are strengthened among the student body, the faculty, and the GSN administration. Based upon its activities during 1999, the Student Advisory Council is serving as an excellent forum to increase faculty/student involvement and on-going curriculum improvements. It also ensures that each member of the GSN student body has a voice in the programs and activities that take place throughout the Academic Year.

GSN ALUMNI

Graduate Profile. The GSN has 96 uniformed graduates: Army - 17; Navy - 7; Air Force - 66; and, Public Health Service - 6. Forty uniformed officers have graduated from the Nurse Practitioner Program; fifty-six uniformed officers have graduated from the Nurse Anesthesia Program. All graduates receive a Master of Science in Nursing (MSN) Degree from the University. To date, 95 GSN graduates remain on active duty in their individual services. The GSN alumni do not have a formal residency requirement so they go directly into clinical practice, consistent with the credentialing guidelines at the individual health care facilities. The GSN alumni can expect to serve at least one tour as practitioners or anesthesiologists before being considered for assignments in any other role. All GSN graduates are currently practicing as family nurse practitioners or as certified registered nurse anesthetists. **All GSN graduates have passed the national certification examination; 96 percent have passed on their initial examination at the upper percentile.**

The immediate measurable standard of success for the GSN alumni is the passing of the National Certification Examinations. The next short term measure is their successful performance as advanced practice nurses as determined by their immediate supervisors. Members of the GSN Department of Nursing Research Evaluation Committee and faculty representatives from the Departments of Nurse Practitioner and Nurse Anesthesia were tasked with designing a tool to effectively measure alumni performance and to provide reports on such to the Dean, GSN, and the Federal Nursing Chiefs. That tasking was accomplished during 1999. Reviews of these reports by the GSN and the Federal Nursing Chiefs will ensure that the GSN curriculum is meeting the requirements of the Uniformed Services.

The GSN alumni have three career tracks: clinical, administrative, and research. There are a number of "nontraditional" and operational assignments available as well; only a limited number of alumni would be expected to pursue those assignments. New avenues for command and staff positions are continuously opening for advanced practice nurses. It is expected that the GSN alumni will continue to be recognized and rewarded for their outstanding performance with career assignments of ever-increasing responsibility.

The Class of 1999 GSN Outstanding Student Awards.

Nurse Anesthesia Program Outstanding Student Award. **Lieutenant Rachael J. Nikkola, RN, NC, USN**, distinguished herself as a student in the Nurse Anesthesia Program of the Graduate School of Nursing. Her dedication to excellence made her a role model for the other officers and advanced practice nurses. The level of knowledge and clinical expertise that she provided made her essential to the acceptance of the students of the Nurse Anesthesia Program at the diverse GSN clinical sites. Lieutenant Nikkola consistently exemplified the highest ideals of both the military and healing professions.

Family Nurse Practitioner Program Outstanding Student Award. **Major Paula L. Pengilly, RN, USAF, NC**, distinguished herself as a student in the Family Nurse Practitioner Program of the Graduate School of Nursing. She employed a sound scientific foundation, an inquiring mind, and a collaborative

approach to the comprehensive care of her patients. Major Pengilly demonstrated personal initiative, perseverance, and outstanding character throughout her academic endeavors at USU.

Academic Performance Awards. **Captain Wendy Aronson, RN, USAF, NC**, received the Distinguished Academic Performance Award, Nurse Anesthesia Program, which recognizes the graduating student having the most outstanding academic proficiency in a nursing program. **Major Kolet Pablo, RN, AN, USA**, received the Distinguished Academic Performance Award, Family Nurse Practitioner Program.

Distinguished Clinical Performance Awards. **Captain Robert Woods, RN, AN, USA**, received the Distinguished Clinical Performance Award, Nurse Anesthesia Program. **Captain Heather Moledor, RN, USAF, NC**, received the Distinguished Clinical Performance Award, Family Nurse Practitioner Program.

Class of 1999 - Articles of Nurse Anesthesia Graduates Were Published in the Journal of the American Association of Nurse Anesthetists.

Captain L. Wendy Aronson, RN, BSN, USAF, NC, GSN Nurse Anesthesia Class of 1999 and **Maura S. McAuliffe, CRNA, Ph.D., Acting Chair, Department of Nurse Anesthesia**, had their abstract, "Variability in the ASA Physical Status Classification Scale," published in the Journal of the American Association of Nurse Anesthetists, August 1999, Volume 67/Number 4. The study assessed interrater reliability among anesthesia providers in assigning ASA physical status classification scores to ten patient scenarios, eight of which had been previously tested. The focus was to explore interrater reliability within and among anesthesia provider groups (nurse anesthetist, anesthesiologist, military, and nonmilitary) and whether reliability varied in the scenarios tested. This study demonstrated a lack of interrater reliability in assigning ASA physical status scores to fixed scenarios, which is consistent with previous studies, within, as well as, among the groups of providers. Of the ten case scenarios presented, none demonstrated interrater reliability.

Lieutenant Rachael Nikkola, RN, NC, USN, GSN Nurse Anesthesia Class of 1999; W. Patrick Monaghan, SBB, CLS, Ph.D.; Loretta A. Madden, CDR, CRNA, NC, USN; E. Jane McCarthy, CRNA, Ph.D., FAAN; and Eugene Levine, Ph.D. had their abstract, "Prevalence of Visible and Occult Blood on Airway Management Equipment Used Outside of the Operating Room," published in the Journal of the American Association of Nurse Anesthetists, August 1999, Volume 67/Number 4. The incidence of visible and/or occult blood on airway management equipment located in emergency crash carts, airway management carts, and airway management bags located outside of the operating room was studied in an attempt to determine whether the current procedures for cleaning, disinfecting, sterilizing, and handling of airway management equipment located in these areas are effective in removing blood, as evidenced by the lack of visible and/or occult blood on laryngoscope blades, handles, and Magill forceps that have been identified as "ready for patient use." Study results document that improperly cleaned airway management

equipment continues to be used when performing lifesaving procedures. Such equipment can potentially expose patients to life-threatening infectious diseases.

Three GSN Graduates Have Posters Noted in the Journal of the American Association of Nurse Anesthetists (AANA) and Exhibited at the National Conference of the AANA.

Captain Beverly Dawn Ostermeyer, RN, USAF, NC, Nurse Anesthesia Class of 1999, exhibited her poster, "Clinical Experiences Nurse Anesthesia Students Find Most and Least Beneficial at Three Stages of Clinical Education," during the 1999 national conference of the American Association of Nurse Anesthetists. Her poster was also noted in the Journal of the American Association of Nurse Anesthetists, August 1999, Volume 67/Number 6.

First Lieutenant Jeffrey Schrader, RN, AN, USA, Nurse Anesthesia Class of 1999, exhibited his poster, "A Double-Blind Randomized Placebo Controlled Trial of Magnesium Oxide for Alleviation of Chronic Low Back Pain," during the 1999 national conference of the American Association of Nurse Anesthetists. His poster was also noted in the Journal of the American Association of Nurse Anesthetists, August 1999, Volume 67/Number 6.

Captain Susan Perry, RN, USAF, NC, Nurse Anesthesia Class of 1998, exhibited her poster, "The Prevalence of Visible and/or Occult Blood on Anesthesia and Monitoring Equipment," during the 1999 national conference of the American Association of Nurse Anesthetists. Her poster was also noted in the Journal of the American Association of Nurse Anesthetists, August 1999, Volume 67/Number 6.

Class of 1998 - Captain Terrence McManus, RN, USAF, NC, Family Nurse Practitioner graduate of the Class of 1998, was recognized for his collaboration with **Andre Dubois, M.D., Ph.D., Research Associate Professor, Department of Medicine**, when he presented his findings at the Association of Military Surgeons of the United States (AMSUS) Annual Meeting. Captain McManus' thesis was titled, "Prevalence of Helicobacter Pylori in Gastric Fluid in the Surgical Patient." H. pylori associated peptic ulcer disease afflicts ten percent of the U.S. population. In his study, Captain McManus collected gastric fluid from asymptomatic patients about to undergo general anesthesia. Results indicated that culturing gastric fluid is a simple, yet specific method to establish the presence of H. pylori, and that nasogastric aspirates and tubes should be considered as potentially infectious. In May of 1999, Captain McManus was notified that he had been selected for promotion to Major; he is currently enrolled in a doctoral program.

Class of 1997 - Lieutenant David Olsen, RN, NC, USN, GSN Nurse Anesthesia, was one of eight contributors to an article, "Surgical Wound Morbidity in an Austere Surgical Environment," that was published in Military Medicine, International Journal of AMSUS, Volume 165, January 2000. The

purpose of the study was to determine if procedures performed in the field hospital had greater infectious risks as a result of the environment compared with historical reports for traditional hospital or clinical settings. The infectious wound morbidity for operations performed in the field hospital environment was found to be equivalent to that described for the fixed hospital or clinical settings. No special precautions were necessary to ensure a low infection rate. The safety for patients undergoing elective surgical procedures has been established. Further training using these types of facilities should not be limited based on concerns for surgical wound morbidity.

Class of 1997 - Captain Carol L. Rayos, RN, USAF, NC, GSN Graduate, Nurse Anesthesia and John P. McDonough, Ed.D., CRNA, had their paper, "Acute Pain Management Services: A Comparison Between Air Force and U.S. Hospitals," published in Military Medicine, Volume 164, December 1999. The purpose of the study was to assess the prevalence of acute pain management services in Air Force medical facilities. There are no published reports on the current status of Air Force pain programs. This study used a telephone survey to all facilities worldwide that house an anesthesia department. Respondents were asked questions related to the initiation of a formal acute pain management services program, components, and familiarity with the Agency for Health Care Policy and Research guidelines on pain management. Findings suggest an increased awareness of the need for pain management and future establishment of pain programs.

FACULTY

Composition. The Graduate School of Nursing has 15 full time faculty: nine civilians and six uniformed officers. There are 123 off-campus faculty: 85 civilians, and 38 uniformed officers who assist in the programs of the GSN.

Selected Profiles of Graduate School of Nursing Faculty.

Outstanding Uniformed Faculty Award. **Major Lorraine Fritz, RN, AN, USA, GSN Commandant**, was selected by the GSN students to receive the Uniformed Faculty Award at the May 1999 Graduation. The GSN students chose Major Fritz as the uniformed faculty educator who exemplified the highest qualities of a graduate nursing educator by personal example and performance. As Commandant of the Graduate School of Nursing, Major Fritz ensured that the needs of the students were met, and that professionalism was always a priority.

Outstanding Civilian Faculty Award. **Donald D. Rigamonti, Ph.D., Associate Professor, Department of Nurse Anesthesia**, was selected by the GSN students to receive the Civilian Faculty Award at their May 1999 Graduation. The GSN students selected Dr. Rigamonti as the civilian faculty educator who displayed the highest qualities of a graduate nursing educator by personal example and performance. Dr. Rigamonti consistently demonstrated an extraordinary level of caring for his students.

Induction of GSN Dean into the National Women's Hall of Fame. In December of 1999, **Faye G. Abdellah, RN, Ed.D., Sc.D., FAAN, Professor and Dean, Graduate School of Nursing**, was officially notified by the National Women's Hall of Fame, Seneca Falls, New York, that she has been selected for induction in October, 2000. Her "selection was made by a panel of distinguished judges from many leading organizations, educational institutions, and fields of achievement which recognized Dr. Abdellah's extraordinary accomplishments." She will join the 157 eminent women who have been inducted into the Hall of Fame since its founding in 1969 (e.g., **Clara Barton, Mary Cassatt, Emily Dickinson, Dorothea Dix, Amelia Earhart, Helen Keller, Sandra Day O'Connor, Rosa Parks, Eleanor Roosevelt, Harriet Tubman**, etc.). The National Women's Hall of Fame is a national membership organization that honors and celebrates the achievements of individual American women.

Uniformed Nurse Practitioner Association's Scientific Award. **Colonel Quannetta Edwards, USAF, NC, Assistant Professor, Department of Nursing Research**, received the Uniformed Nurse Practitioner Association's Scientific Award for Excellence in Research for her work, "Health Behavior of Prostate Cancer Screening: African-American Men's Perception and Comparison to Health." Colonel Edwards received the award and a cash prize at the Association's 1999 14th annual conference, held in Austin, Texas.

GSN Associate Dean Serves as the Ethics Consultant to the Air Force Surgeon General. Throughout 1999, **Colonel Martha Turner, RN, USAF, NC, Associate Dean, Graduate School of Nursing**, was involved in numerous activities due to her role as the Ethics Consultant to the Air Force Surgeon General. Most significant was her presentation, "Ethical Considerations in Humanitarian Deployments" to the Society of Medical Consultants to the Armed Forces (SMCAF). This lecture addressed the moral and ethical challenges due to austere environments, cultural differences, and variations in the scope of practice. The lecture was received with enthusiasm and generated dynamic discussion. Other lectures on ethics were presented at the 89th Medical Group, Andrews Air Force Base, and at the 11th Medical Group at Bolling Air Force Base. These lectures are part of an ongoing initiative in the U.S. Air Force to increase awareness of ethical issues and to provide guidance for conversations and consultations that can be used in resolving ethical issues. Other responsibilities included serving on the TriService Nursing Research Program Advisory Council which also offered the opportunity to give a presentation titled, "Getting Started: Grant Writing Tips," at the meeting of military nurse researchers at AMSUS. Another activity that is part of Colonel Turner's community service is serving as a member of the Minnesota Nurses Association Ethics Committee. She was primary author on the recently approved position statement on pain management. This document will be used statewide to guide both practice and policy. Finally, representing the Air Force and USU, she traveled to the University of Virginia at Charlottesville to speak on the History of the Air Force Nurse Corps. Colonel Turner and **Leon Moore, Ph.D., Director, USU Center for Informatics in Medicine**, are also actively assisting **the Chair of the TriService Surgeons General Ethics Consultants Group, Edmund G. Howe III, M.D., Professor, USU Department of Psychiatry**, with setting up a networking program among the consultants and identifying an ethics contact with all medical activities throughout the world.

Chair of the GSN Faculty Council Provides Faculty Representation. **Diane C. Seibert, MS, CRNP, Assistant Professor and Chair of the Faculty Council**, represented the GSN faculty throughout 1999 at many critical meetings held by: the Deans Council; the GSN Committee on Appointments, Promotions, and Tenure; and, the Federal Nursing Chiefs and their representatives. She also worked on the program assessments/reviews that took place throughout the GSN. In addition to her consistent support throughout the entire Academic Year, Ms. Seibert found time to publish two chapters (Chapters 50 and 71) in Pharmacology for the Primary Care Provider, Edmunds & Mayhew, 2000; she served as a reviewer for Lippincotts Primary Care Practice Magazine where she edited and reviewed one article; she also edited and reviewed three articles for the American Journal of Nursing. Ms. Seibert has served as a member of the National Nurse Practitioner Conference Program Planning Committee since 1995. **Cindy Grandjean, RN**, also contributed to the Edmunds & Mayhew book.

THE NURSE PRACTITIONER DEPARTMENT

Background. The first formal training program was established in 1960 to prepare advanced practice pediatric nurses. In 1967, public health nurses received advanced training to care for patients in their homes. Nurses were initially taught to take a full medical history, conduct a comprehensive physical examination, and oversee the use of medications. Eventually, nurse practitioners were performing those activities in the offices of the physicians with whom they worked. In 1977, the Medicare statute was amended to allow nurse practitioners to provide primary care independently in underserved rural areas. Nurse practitioner programs grew quickly; and, the advanced practice nurses found work in hospital-based clinics, providing care to underserved patients. In 1994, the National Advisory Council on Nurse Education and Practice for the Health Resources & Services Administration of the Department of Health and Human Services identified the need to upgrade the knowledge, skills, and abilities of the existing registered nurse work force to match the practice requirements within today's health care systems. Currently, every state gives nurse practitioners some level of pharmaceutical prescribing authority. In 1995, the Institute of Medicine engaged in an inclusive study, "Primary Care: America's Health in a New Era." The study provided the following definition: primary care is the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community. Today, through advanced education and training in the science of disease prevention, health promotion, health education, and community and home-based care, the advanced nurse practitioner is recognized as an essential member of the health care team. During 1999, the American Association of Colleges of Nursing also reported that the demand for advanced practice nurses continues to increase. Current demands across the country are for advanced practice nurses who can deliver a high complexity of care across the projected life-span of their patients within an integrated health care system. The significant role of the advanced nurse practitioner within the health care community is recognized. And, the current shortage of advanced practice nurses who are qualified to assess, diagnose, and manage patients in primary care settings has also been confirmed. In light of this, the nursing community is dedicated to ensuring that the existing nurse practitioner programs are of the highest quality and that they meet or exceed all educational standards and credentialing safeguards established by the National Organization of Nurse Practitioner Faculties and the credentialing entities of the National League for Nursing.

Composition of the Nurse Practitioner Department. Under the leadership of the (Acting) Chair, Department of Nurse Practitioner, the department has grown in numbers of students, faculty, and clinical practice sites. The Family Nurse Practitioner (FNP) Program has a total of 30 students; the FNP Program is currently 24 months in length. In June of 1999, the FNP Program was increased from 21 to 24 months to allow for the integration of women's health competencies as recommended by the Federal Nursing Chiefs. The Program includes 54 academic credits with 1,030 hours of clinical experience (the initial 21 month program included 720 hours of clinical experience).

There are also six uniformed officers enrolled in a resident, one-year Post-Master's FNP Program that retrains advanced practice nurses in specialties that are required by the Services. These uniformed nurses must already have a clinical specialty area, usually one that is no longer required by their Service. The program length is between six months to one year depending upon the education and experience of the individual student.

Outcome Goals of the Family Nurse Practitioner Program. Upon completion of the Family Nurse Practitioner Program, the FNP faculty is committed that their graduates will be able to: 1) assess the health and developmental status of patients using the appropriate data gathering and health assessment techniques; 2) evaluate family systems to determine individual and family health care needs; 3) evaluate cultural, economic, and environmental factors which affect family relations, patient behavior, health, and health care delivery; 4) develop and implement, in conjunction with the patient and family, an individual and family health care plan that emphasizes health promotion and disease prevention; 5) analyze and comprehensively manage common acute and chronic health problems; 6) engage in collegial and collaborative relationships with other health care providers in order to provide optimal delivery of primary care to the patient, family, and community; 7) utilize personal skills in communicating with and counseling the patient, family, other health team members, and the public; 8) analyze the delivery of patient health services and the role of the Family Nurse Practitioner within the health care system; 9) evaluate personal role development as a Family Nurse Practitioner; 10) develop, promote, and implement the role of the Family Nurse Practitioner in, traditional and non-traditional practice sites; and, 11) utilize research based findings as a means of improving patient care.

Clinical Sites at Military Health Care Centers. The Department of Nurse Practitioner has entered into memoranda of understanding for its affiliations with 17 military health care facilities: **Army - (5)** the 4214th U.S. Army Hospital, Baltimore, Maryland; the DeWitt Army Community Hospital, Fort Belvoir, Virginia; the Kimbrough Ambulatory Care Center, Fort Meade, Maryland; the Walter Reed Army Medical Center, Washington, D.C.; and, the Aberdeen Proving Ground, Maryland; **Navy - (7)** the Naval School of the Health Sciences, Bethesda, Maryland; the Naval Medical Center, Indian Head, Maryland; the Washington D.C. Navy Yard Branch Medical Clinic; the Annapolis Naval Medical Clinic, Maryland; the National Naval Medical Center, Bethesda, Maryland; the Naval Air Facility Branch Medical Clinic, Andrews Air Force Base; and, the Quantico Naval Medical Clinic, Virginia; **Air Force - (5)** the David Grant, USAF Medical Center, Travis Air Force Base, California; the 11th Medical Group, Bolling Air Force Base; the 1st Medical Group, Langley Air Force Base; the 74th Medical Group, Wright-Patterson Air Force Base, Ohio; and, the 89th Medical Group, Andrews Air Force Base, Maryland. In addition, the NP Department has affiliations with 68 other civilian and government treatment facilities.

1999 Program Review. During 1999, the Nurse Practitioner Department conducted an inclusive review of its entire program and an assessment of the success of its educational program as demonstrated by the FNP graduates.

Program Assessment. To date, a total of 40 nurse practitioner graduates have taken the ANCC National Certification Examination for Family Nurse Practitioners. Thirty-nine out of the 40 students, 97.5 percent, successfully passed the examination on their first attempt (the 1998 National Certification statistics indicate a 76 percent certification pass rate on the examination). All of the 40 graduates are currently certified. With the assistance of the GSN Nursing Research Department, in-depth surveys were conducted to determine both GSN graduate and supervisor satisfaction with the FNP educational program. Eighty-six percent of the responding supervisors rated the educational program as excellent; fourteen

percent rated the educational program as good; no supervisor rated the FNP Program at the levels of adequate, fair, or poor (see the detailed discussion on the survey instrument provided in the Nursing Research Department section of this report).

Curriculum Assessment. Extensive coordination has taken place between the Department of Nurse Practitioner and the Offices of the Federal Nursing Chiefs throughout 1999. As a result, the following program enhancements were set in place: 1) under the newly implemented curriculum, the FNP students will increase their hours of clinical experience from 720 to 1,030 hours; this change occurred, in part, due to survey responses from both graduates and supervisors who recommended additional experience in the development of skills for efficient management of the time required for patient care/service; 2) the additional increase of three months to the overall FNP Program (an increase from 21 to 24 months) will allow the FNP students to spend their entire last year in a practicum where they can gain more experience in the emergency room, in triage, ACLS, X-ray interpretation, and ortho assessment; 3) while the actual number of written papers has been reduced throughout the FNP Program, weekly oral reporting by the students assigned to clinical sites has been increased. Throughout all of the FNP courses, the students must provide an oral presentation on subject matter related to each course. To prepare for their presentations, students must research relevant clinical literature and formulate a cogent presentation; additionally, FNP students are asked to research pertinent journal articles in conjunction with their Research Courses and Scholarly Project requirements; 4) to respond to recommendations from supervisors of GSN graduates that the GSN graduates must continue to read relevant journals and nursing literature during their entire career, the FNP faculty is increasing its efforts to emphasize the critical importance of scholarly reading throughout the entire FNP Program; and, 5) curriculum review processes have been successfully established throughout the FNP Program and following graduation.

THE NURSE ANESTHESIA DEPARTMENT

Background. Nurse anesthetists have faithfully served their Nation in all of its wars and conflicts and at home during times of peace throughout the 20th Century. During the late 1800's, Dr. Charles Mayo appointed Alice Magaw, his nurse anesthetist at St. Mary's Hospital in Rochester, Minnesota, as "Mother of Anesthesia." She was a talented anesthetist at a time when people from all over the world came to the Mayo treatment center to learn from its physicians and nurses about anesthesia. In fact, the U.S. Army sent nurses to Dr. Mayo to study anesthesia before the United States entered World War I.

Nurse Anesthetists provided anesthesia during World War I and served in the Combat Clearing Stations near the front lines in France; they taught French nurses and physicians to do anesthesia, and with British physician concurrence, taught British nurses to provide anesthesia, relieving over 100 physicians to do other medical and surgical work.

During World War II, four nurse anesthetists were among the nurses captured in the Philippines, having provided anesthesia services in the jungles of Bataan and on Corregidor until the ether and other drugs ran out, along with the food and ammunition. Nurse Anesthetists served with distinction throughout every operational theater in WWII; they were at Anzio, Salerno, on board Navy ships, and went in to Normandy with the first hospital.

Nurse anesthetists also served proudly during the Korean War, in Vietnam, Granada, Panama, Somalia, Desert Storm, and other military missions requiring anesthesia capability. Throughout the entire Century, physicians' and nurse anesthetists have successfully worked together during times of war, humanitarian operations, and in civilian practice.

Nurse Anesthetists, among the first to incorporate the Harvard Monitoring Standards, consistently follow the philosophy that the nurse anesthetist has a duty to the patient he/she anesthetizes, to stay with the patient and provide continuous care and monitoring. While most professional certifications for nurses were started in the 1970's, the nurse anesthesia certification program has existed since 1945. Specialty nursing certification has grown significantly over the last two decades. A study conducted by the Nursing Credentialing Research Coalition and released in February of 2000, found that certification has a dramatic impact on the personal, professional and practice outcomes of certified nurses. Specifically, the study stated that certification is a successful approach to improving patient safety and the overall quality of care. In addition, the practice of anesthesia is much safer today due to the advancing knowledge and technology that allows every one in the operating room, from the surgeon to the nurse anesthetist to the technician, to do his/her job better.

Composition of the Department of Nurse Anesthesia. Under the leadership of the (Acting) Chair, Department of Nurse Anesthesia and Program Director, the Certified Registered Nurse Anesthesia (CRNA) Program has a total of 28 students. The Program is 27 months in length; and, includes 72 academic credits and over 2,000 hours of clinical experience. The Federal Nursing Chiefs have been coordinating with the GSN and have agreed to extend the length of the Nurse Anesthesia Program to 30 months. This change, which conforms with Nursing Anesthesia Programs across the United States, will lengthen the experience at the clinical sites and be implemented by June of 2000.

Outcome Goals of the Certified Registered Nurse Anesthesia Program. Upon completion of the Nurse Anesthesia Program the faculty of the Nurse Anesthesia Department is committed that either through the oral examination process or actual demonstration on any patient or selected pieces of equipment, the nurse anesthesia graduate will be able to: 1) perform a thorough preoperative health assessment; 2) formulate a compatible anesthetic plan utilizing the appropriate anesthetic technique; 3) induce anesthesia, keeping the patient's physiologic responses within the predetermined range of acceptable parameters; 4) conduct the maintenance phase of an anesthetic, maintaining the range of acceptable physiologic parameters; 5) conduct a timely emergence from anesthesia maintaining the predetermined range of acceptable physiologic parameters; 6) perform anesthesia machine pre-check procedures, resulting in an operational machine; 7) identify all monitors required by the Harvard Monitoring Standard; 8) operate, including calibration, all monitors required by the Harvard Monitoring Standard; 9) identify all common sources of potential electrical hazards to patients while under the control of the anesthesia department; and, 10) be able to critically evaluate the anesthesia research literature and design an anesthesia research study.

Clinical Sites at Military Health Care Centers. The Nurse Anesthesia students perform their clinical work at six military health care centers which include: **Army** - (2) the Walter Reed Army Medical Center, Washington, D.C.; and, the DeWitt Army Community Hospital, Fort Belvoir, Virginia; **Navy** - (1) National Naval Medical Center, Bethesda, Maryland; Air Force - (3) the Malcolm Grow Air Force Medical Center, Andrews Air Force Base, Maryland; the David Grant Medical Center, Travis Air Force Base, California; and, the Wright Patterson Hospital in Dayton, Ohio. In addition to these military centers, the Nurse Anesthesia students also perform clinical work at the Washington Hospital Center, Washington, D.C. and St. Christopher's Hospital for Children in Philadelphia, Pennsylvania. (The Department of Nurse Practitioner also has clinical sites at these six military medical centers.)

1999 Program Review. During 1999, the faculty of the Certified Registered Nurse Anesthesia (CRNA) Department collaborated with the Federal Nursing Chiefs to conduct an inclusive review and assessment of its entire educational program as demonstrated by the success of its CRNA graduates.

Program Assessment. To date, a total of 56 Nurse Anesthesia graduates have taken and passed their certification examinations. With the assistance of the Nursing Research Department, in-depth surveys were conducted to determine both GSN graduate and supervisor satisfaction with the CRNA educational program. Seventy-three percent of the responding supervisors rated the educational program as excellent. Thirteen percent rated the educational program as good; thirteen percent rated the educational program as fair; and, no supervisors rated the CRNA Program at the levels of adequate or poor (see the detailed discussion on the survey instrument provided in the Nursing Research section of this report).

Curriculum Assessment. Collaborative efforts throughout 1999 resulted in a positive exchange of information between the Nurse Anesthesia Department and the Offices of the Federal Nursing Chiefs. As a direct response to the 1999 surveys and coordinated assessments, the following enhancements to the

curriculum were agreed upon: 1) in January of 2000, the faculty of the Nurse Anesthesia Department completely restructured three courses: Pathophysiology and Basic and Advanced Principles of Anesthesia. The Nurse Anesthesia Department contracted with **Dr. Osvaldo Bustos** to instruct the Pathophysiology Course. Under his direction, the students have expressed a renewed interest in the course; 2) the didactic curriculum has been re-sequenced so that the courses are taught in a more integrated manner. For example, students first learn about the structure of the human body (Anatomy and Cell Biology), which is followed by the study of function (Physiology) and then, malfunction (Pathophysiology); 3) operational readiness concepts are integrated into each course. Concepts are taught with special attention to their application to military health care. For example, the management of gunshot wounds will be covered in anesthesia for trauma; and, aspects of Nuclear, Biological, and Chemical (NBC) warfare will be incorporated into the Pathophysiology and Anesthesia Pharmacology Courses. The Nurse Anesthesia faculty will also coordinate on the Military Medical Humanitarian Assistance Course; 4) the use of a patient simulator and the instructions for using regional anesthesia and central line placement have been incorporated wherever possible in the Nurse Anesthesia curriculum. This has resulted in providing a bridge between the academic and clinical phases of the educational program; 5) the scheduled return of the clinical students to the cadaver laboratories will reinforce the concepts of anatomic and regional anesthesia; 6) the Anesthesia Seminars have been restructured and scheduled to accommodate the students on clinical rotations; and, 7) the faculty of the Nurse Anesthesia Department has instituted quality assessment/improvement plans for on-going programmatic evaluation. The GSN Nursing Research Department will assist in the resulting process for gathering program statistics, to include trends of clinical case counts, certification examination results, summaries of application/admission results, and collective trends in program evaluation.

Assessment of Clinical Sites. In response to recommendations provided during 1999 by both GSN graduates and their supervisors, all clinical sites for the Nurse Anesthesia Program were re-visited and evaluated by the Nurse Anesthesia faculty to ensure Council on Accreditation of Nurse Anesthesia Educational Programs (COA) approval. **CAPT Cynthia Cappello, RN, NC, USN**, newly assigned to the faculty of the Nurse Anesthesia Department, has assisted the Acting Department Chair, in both the clinical site visits and the assessment process. Individual assessment and monitoring of the GSN students have been increased. Clinical rotations have been re-sequenced so that students rotate back to their primary site every two to three months; this allows for a closer monitoring of the progress of students on an individual basis. Following collaboration with the Director of Nursing Services at the Walter Reed Army Medical Center (WRAMC), additional clinical sites are now offered that include the supervision of highly qualified WRAMC staff to support the GSN students. Health assessment demonstration/practice rooms are also available at WRAMC for all students. And, all Nurse Anesthesia students will spend the first three months of their clinical assignments in military facilities.

Patient Simulator...Realistic Training through Advanced Technology. The patient simulator has previously been addressed in Part II of this report. The USU's GSN program for Nurse Anesthetists has increased the utilization of the patient simulator for training as well as for evaluation. First, the GSN students receive simulator training in anesthesia induction procedures. After extensive classroom study, the students return to the simulation area where each student is presented with his/her own unique (simulated) case. These cases include specific (simulated) patients superimposed with complicating events that could occur during the anesthesia induction process. The GSN students combine everything they have

learned about the physiology of gas exchange and physiologic and pharmacologic responses and actually perform the procedures and administer anesthesia without putting human patients, or themselves, at risk.

Scholarly Project. Each graduate must complete an individual or group thesis or scholarly project before graduation from the GSN. The student's research project generally has application to anesthesia practice and includes bench studies, both quantitative and qualitative research, surveys, and clinical studies. All topics must be relevant to the Uniformed Services and serve to enhance the clinical practice of the graduate. All students are encouraged to publish their findings.

Innovative Teaching of Traditional Nurse Anesthesia Topics. Contemporary training of nurse anesthesia students requires innovative technologies while maintaining traditional, proven techniques. The Council on Accreditation of Nurse Anesthesia Educational Programs (COA) outlines a variety of requirements related to the nervous system including regional blocks which students must master for the successful administration of anesthesia. To meet these requirements, a unique program is being taught by a diversified clinical and basic science faculty drawn from the GSN, the School of Medicine, affiliated hospitals, and federal agencies. Three courses are taught in the summer and fall semesters and are coordinated by **Donald D. Rigamonti, Ph.D., a neuroscientist in the GSN Department of Nurse Anesthesia.** They are Anatomy/Cell Biology and Neuroscience I and II. The summer semester provides an extensive use of a "state-of-the-art" anatomy teaching laboratory where regional anesthesia is demonstrated. Both the laboratory and regional anesthesia teaching have been cited as highlights by COA site reviewers. The classrooms and library have several software packages "on line" and these are used during the Anatomy and Cell Biology Course. Neuroscience I is also taught in the summer and provides a review of basic neurophysiological concepts and an examination of gross central and peripheral nervous system structures. Neuroscience II is taught in the fall semester ; it provides an in-depth review of neurophysiological concepts related to peripheral nerves, spinal cord segments, and the brain. These principles are demonstrated in laboratories utilizing human subjects and computer-assisted data acquisition. In addition, computer-aided instruction is routinely used to teach human anatomy, cell biology, and nervous system structure and function. Throughout their courses of instruction, individual students are assigned lecture topics. They can then select laboratory sessions, including cadaver labs, and lead discussions with visiting faculty and study groups. During these classes, the lectures, student notes and clinical questions are recorded on computer disks. The GSN will make this information available on the Internet once resources are identified. These courses utilize the Visible Human Project, which is available through the National Library of Medicine; a resource which offers the possibility of simulating anesthetic procedures in the virtual environment.

Pilot Distance Learning Project for Certified Registered Nurse Anesthetists Master of Science in Nursing Completion Program.

"Video conferencing, CD-ROM, and the Internet are opening wide the doors of access to both aspiring students and professional nurses who want to advance their skills."

The American Association of Colleges of Nursing, Issue Bulletin,
"Distance Learning is Changing and Challenging Nursing
Education, January, 2000.

A pilot distance learning Master of Science in Nursing Completion Program is being offered by the USU GSN for Certified Registered Nurse Anesthetists (CRNAs). The project is partially funded by a grant awarded in August of 1998. The purpose of the project is to explore several distance learning technologies. Prior to the awarding of the grant, two classes, Medical Pharmacology and Role Development were delivered to distant sites. These distance courses were provided by videotaping didactic lectures, along with group discussions conducted via the Internet. The taping and group discussion strategies proved successful as evidenced by a variety of outcome measures, including student examinations, written assignments, and course evaluations. As part of this grant, GSN Course 0514, Health Assessment, was provided to six distance sites by taping didactic and demonstration lectures. Demonstrations were professionally videotaped. The tapes were duplicated and distributed to the six students enrolled in the pilot program. Group discussion on the Internet reflected that the tapes of the demonstration lectures were determined to be a quality product. Additionally, the principal investigator is keeping detailed anecdotal records for both the documentation and evaluation of the project. The documentation will be used to determine the effectiveness in adapting a traditional lecture and demonstration course to video-lectures combined with live discussions and review sessions over the Internet. Of the six students, five are expected to complete the course in 2000 (one Army, one Navy, and three U.S. Air Force officers). One Air Force student is expected to graduate in May of 2000.

The grant also provides funding for generating a CD-ROM of the Nursing Theory and Research Course. This course material is currently taught to all GSN students. Faculty lectures have been converted to PowerPoint presentations and were audiotaped. These were digitized in Photo CD format and transferred onto a CD-ROM. The "distance" students received the CD-ROM along with course-related materials during 1999. The course also included an Internet-based asynchronous conference facility to allow interaction between students, faculty, and the course director. Students are evaluated by course grades and comparisons with the traditional GSN students who take the course on the USU campus. Again, the principal investigator is generating detailed records for both the documentation and evaluation of the desirability of adapting traditional lecture courses to CD-ROMs for distance learning.

THE NURSING RESEARCH DEPARTMENT

Background and Mission. The Nursing Research Department, under the leadership of its Department Chair, was established to assist the educational programs in the GSN. **This department allocates over 80 percent of its resources to provide the Departments of Nurse Practitioner and Nurse Anesthesia the following support:** 1) guidance and individual support to **all** GSN students for their thesis or scholarly projects (1999: 13 FNP theses; 23 NA theses; **all** studies focused on clinical practice or specialty characteristics. After consultation with the Federal Nursing Chiefs during 1999, it has been decided that the GSN students may now chose among several types of scholarly projects that include: research culminating in either a written thesis or a publishable paper; a research practicum; and/or, a defined project. No matter which option is chosen, any scholarly project can be done individually or in a group. A GSN research committee will determine that each scholarly project meets the USU requirements for a Master of Science Degree; 2) instruction of course work for the two nursing programs during the 1999 Academic Year: two courses were presented; two academic credits were earned for each course; and, during the fall and spring semesters, 38 students attended each course); 3) coordination for the distance learning programs; 4) implementation and analyses of assessment and outcome surveys of GSN graduates and supervisors; 5) preparation for, and implementation of reaccreditation processes for: a) the National League for Nursing Accrediting Commission, Fall 2001;b) the American Association of Colleges of Nursing Commission on Collegiate Nursing Education, Fall 2001; and, c) the Council on Accreditation of Nurse Anesthesia Educational Programs, Fall 2003; 6) leadership for the Electronic Military/Uniformed Services Nursing Research (EMUSNR) data base effort; and, 7) executive guidance for the GSN Science and Engineering Apprentice Program.

The Electronic Military/Uniformed Services Nursing Research Data Base - A Collaborative Effort.

Background. The Electronic Military/Uniformed Services Nursing Research (EMUSNR) data base emerged from the Federal Nursing Advisory Council. The Council approved the formation of a Task Force with a goal to "design and develop an electronic bibliographic storage retrieval data base for nursing research documents in the military and uniformed services." **Virginia K. Saba, Ed.D., Professor and Advisor on Educational Technologies, GSN Nursing Research Department, was appointed as the Chair of the Task Force. Barbara Sylvia, Ph.D., Associate Professor and Chair, GSN Nursing Research Department, was also appointed to the Task Force.**

Following the guidance of the Task Force, the development of an Electronic Military/Uniformed Services Nursing Research (EMUSNR) data base was initiated by the GSN. The data base was designed, with the assistance of CINAHL Information Systems (Cumulative Index to Nursing and Allied Health Literature), as an integral component of the newly created special interest category for the military and uniformed services; **EMUSNR, incorporated as a virtual data base in the CINAHL, is the first of its kind.** This data base provides electronic access to military and uniformed services nursing research documents that have been previously available in only selected and diverse locations.

Global Access. The newly created EMUSNR data base allows global access to documents completed by graduate students at the GSN and the final reports of the TriService Nursing Research Grant Program. The EMUSNR offers electronic searching and retrieval of bibliographic citations to the respective nursing research documents. Those documents will be fully indexed and will consist of the following characteristics: relevant military/uniformed services subject headings; a 150 to 200 word informative abstract; and, a description of research methods, instruments and other research concepts. To accommodate these new information resources and to make them retrievable for the military/uniformed services nursing community, the CINAHL Thesaurus has been expanded. Also, when appropriate, the full text of brief research reports will be incorporated. Currently, the full text of the final grant reports can be obtained from the National Technical Information Services (NTIS). It is expected that this data base will provide significant benefit to the Military Health System.

The Science and Engineering Apprentice Program. For the past four summers, the GSN, through executive coordination provided by **Eugene Levine, Ph.D., Professor, Department of Nursing Research,** has participated in the Science and Engineering Apprentice Program (SEAP) which is sponsored by the DoD. This program assigns high school students, who are selected competitively, to various agencies such as the USU/GSN. The students spend eight weeks during their summer break working on projects of a scientific or technical nature.

A total of ten students have been assigned to the GSN since it began participating in the program in 1996. These students have engaged in a variety of projects, including developing a data base to analyze the characteristics of applicants to the GSN that resulted in an article published in the journal, Military Medicine. Other projects include developing predictors of success in the GSN programs, conducting a survey of textbooks used in pathophysiology courses for advanced practice nurses, creating a data base for theses completed by GSN students, and assisting in laboratory studies by recording data from scientific measuring instruments. The SEAP program has benefitted both the students and the GSN. The high productivity, combined with the quality of their work, resulted in significant progress on numerous GSN projects. Related to their assigned projects, the students visited the University of Maryland's Shock Trauma Center and actually participated in the work of the Center. They also conducted literature searches at the National Library of Medicine and the Clinical Center of the National Institutes of Health, and they attended the Federal Computer Convention (FOSSE) held annually in July of 1999.

The GSN coordinators have followed the progress of their SEAP students. Four students have graduated from high school: with one entering Princeton University and planning to attend the medical school at USU in 2001; another is at Swarthmore College; a third is in the ROTC Program at the University of South Carolina; and, a fourth SEAP student has applied to the Naval Academy. All students have expressed interest in pursuing studies leading to careers in the health sciences.

Alumni Assessment/Survey Process for Outcome Evaluations of the Family Nurse Practitioner and the Certified Registered Nurse Anesthesia Programs.

"I know change can be painful and positive at the same time..... Last week one of the anesthesiologists requested that I do the pediatric anesthesia cases for that day. I feel that I owe so much to the faculty and programs at USUHS. I know that the decision to attend the GSN program made me not only a good CRNA, but also an excellent officer."

Captain Susan Perry, USAF, NC, CRNA, in a letter to Dean Abdellah, dated June 6, 1999.

Background. Since 1996, the Department of Nursing Research has conducted a periodic Alumni Survey of its educational programs. The detailed surveys include both the GSN graduates and their supervisors; although separate data-collection instruments are used for surveying the two groups. The survey instrument used to gather data from the GSN graduates, concerning their evaluation of the education and training received at the GSN, is a thorough, yet simple form which has provided significant data. The survey instrument utilized to obtain evaluations from current supervisors of the GSN graduates gathers data on the graduates' performance in relation to the terminal objectives of the GSN programs and the effectiveness of its programs in preparing the GSN students to meet those objectives.

On-going reviews and in-depth assessments of the survey data have resulted in the identification of areas for improvement. The GSN Faculty Council and Departments have continuously initiated corrections where necessary and expanded their curriculum as appropriate. For example, when graduates of the Class of 1995 recommended the inclusion of training in the procedures for such requirements as suturing, basic laboratory testing, and triage, the GSN faculty incorporated those procedures into the appropriate GSN courses. The Family Nurse Practitioner graduates also recommended the addition of Anatomy into the curriculum; that recommendation was implemented during 1999. The Family Nurse Practitioner Program has recently been expanded from 21 to 24 months in length to allow for additional clinical experiences. In every case, the Federal Nursing Chiefs coordinated with the GSN reference the recommendations; and, in every case, the support of the Federal Nursing Chiefs was both positive and immediate.

During 1999, the GSN Department of Nursing Research prepared an initial compilation of the data provided by supervisors for those GSN graduates who have been in the workforce for at least one year. Included were 25 graduates in the Family Nurse Practitioner Classes of 1996, 1997, and 1998; and, 19 graduates in the Nurse Anesthesia Classes of 1996 and 1997. The overall response rate was 66 percent. A follow up to supervisors is in place to increase the initial response rate. Responding supervisors gave high ratings to both groups of graduates. Eighty-six percent of the Family Nurse Practitioner supervisors rated the Family Nurse Practitioner graduates as excellent and fourteen percent as good, the next highest category. Seventy-three percent of the Nurse Anesthesia supervisors rated the Nurse Anesthesia graduates as excellent, thirteen percent as good, and the remainder as fair. Following this assessment process, a thorough review of all the data and recommendations from the Nurse Anesthesia graduate supervisors was made. And, in consultation with the Federal Nursing Chiefs, it was decided to increase the length of the Nurse Anesthesia Program from 27 to 30 months to provide additional experience for the Nurse Anesthesia students at their clinical sites.

Detailed Examples of the Alumni Surveys. Each alumni was asked to describe his/her experience following graduation from the GSN to include promotions, assignment of leadership positions, awards, publications, presentations, membership in professional organizations, or other achievements. This data will allow the GSN Department of Nursing Research to gather relevant data for use in its long-range outcomes assessment process for determining leadership and operational success and overall retention.

The survey instrument designed by the Department of Nursing Research Evaluation Committee also included a section where the alumni evaluated the GSN programs. The alumni were asked to rate the adequacy of the GSN curriculum in preparing them to: 1) demonstrate the clinical expertise necessary to provide quality care to beneficiaries within the federal system; 2) analyze, synthesize and integrate theory, research findings, and health policy into their practice; 3) assess, design, and implement an appropriate plan of care based on the health and illness of patients, families, the military, and communities; 4) integrate appropriate knowledge, skills, and theoretical concepts in order to provide quality care to diverse populations in various settings; 5) demonstrate ethical behavior consistent with the role of commissioned officers acting in an advanced nursing practice role; 6) utilize leadership, management, and teaching skills for the purpose of improving health care within the Uniformed Services health systems; 7) establish and maintain collaborative relationships with patients, their health team, and other professionals; 8) design, implement, and participate in research/review studies; and, 9) employ knowledge of the legislative process and health policy.

The surveys also collected data on alumni satisfaction or level of confidence with eight components of the educational programs at the GSN: 1) curriculum relevancy to military as well as civilian practice; 2) clinical practice; 3) course content; 4) faculty; 5) educational facilities; 6) library/resources; 7) student workload; 8) the thesis process (from formulation of the research question to the final report); and, 9) other areas as appropriate. **It is especially from this section that recommendations have been received that have already resulted in curriculum changes throughout the GSN educational programs.**

Additional survey questions specific to either the Family Nurse Practitioner Program or the Certified Registered Nurse Anesthesia Program were included in the alumni survey.

Family Nurse Practitioner Program Survey Questions. The survey requested an assessment by the Family Nurse Practitioner alumni of three specific questions including the areas of women's health, adult primary care, geriatrics, and pediatrics: 1) When you first arrived at your duty station, how comfortable did you feel with your clinical knowledge base? 2) How difficult was it for you to develop a differential diagnosis for common primary care problems within the first six months of your practice when dealing with patients? and, 3) In your first six months of clinical practice, how comfortable did you feel with your ability to independently develop an appropriate plan of care for the common primary care diagnoses you found? Twenty-five additional questions followed to gather general assessment data on such areas as journal review/readings, role definition, identification of resources within the practice community, support and knowledge of other providers, the usefulness of their internship, patient loads, amount of acute care, common patient population, prenatal care, frequency and type of procedures, x-ray reading skills, expertise of clinical preceptors during the first year of clinical practice, etc. **Again, the data gathered from this section directly led to curriculum changes for the Family Nurse Practitioner Program.**

Certified Registered Nurse Anesthesia Program Survey Questions. The survey next collected data from the Nurse Anesthesia alumni through a rating process with fourteen questions: 1) When you first arrived at your duty station, how comfortable were you with your clinical knowledge base? 2) When you first started working as a Nurse Anesthetist, how comfortable were you in your new role? 3) Initially, how supportive were others in your clinical setting? 4) How realistic were others' expectations of your skills? 5) Did you receive any formal internship or orientation program at your first clinical assignment? 6) Do you feel your work load/schedule was reasonable? 7) Do you teach any classes in your setting (BCLS, ACLS, etc.)? 8) Do you participate in provider staff meetings in your setting? 9) Are you made to feel a part of the Anesthesia Department and welcome to express your opinion at the meetings you attend? 10) Are you ever left out of meetings that you feel you should have attended? 11) What part of the GSN program did you find particularly beneficial? 12) What areas of the GSN program do you feel could be made stronger (would have prepared you a little better for the "real world")? 13) Although the administration of anesthesia is similar from one facility to another, there may be some differences. Please identify any service specific aspects of your practice; and, 14) Were you well prepared in these service specific aspects of anesthesia care? What could the GSN Nurse Anesthesia Department do to help future nurse anesthetists to be better prepared in the service specific aspects of your practice? **Following those fourteen questions, were 50 items to determine the confidence level for, or the GSN preparation for, the practice of anesthesia.** These items covered such areas as: administering a spinal anesthetic, managing a patient who has a spinal anesthetic, managing a patient who has an epidural anesthetic, administering a brachial plexus block, administering an ankle block, administering anesthesia to a C-section, identifying signs and symptoms of psychological stress displayed by the patient, administering a competent and rational anesthetic for an intrathoracic surgical case, etc. **It was from this specific section that the GSN could identify that the GSN Nurse Anesthesia Department should increase the student experience at the clinical sites. The recommendation was approved by the Federal Nursing Chiefs and is being implemented.**

THE GSN AND DISTANCE LEARNING

The Adult Nurse Practitioner Post-Master's Program - The Department of Veterans Affairs/Department of Defense Distance Learning Program.

The Department of Veterans Affairs and the Department of Defense participated in their **first virtual graduation** (at the Master's Degree level) from the Graduate School of Nursing at the Uniformed Services University of the Health Sciences.

"I am pleased to congratulate you on your accomplishment of graduating from the first Department of Veterans Affairs/Department of Defense Distance Learning Nurse Practitioner Program."

Opening remarks by **Kenneth W. Kizer, MD, MPH, former VHA Under Secretary for Health, Department of Veterans Affairs.** Also in attendance and making remarks was **Jerome F. Smith, Jr., Ph.D., Chancellor for Education and Professional Development, Office of the Secretary of Defense.** The virtual commencement took place on May 18, 1999, via interactive videoteleconferencing and the Internet.

Background. The popularity of distance learning is increasing due to advances in telecommunication, rapid access to knowledge, availability and access to the Internet, changes in student demographics, and interest in previously untapped rural or work-based markets. Distance education evolved from various types of home study. First, through correspondence courses, the instructors sent assignments, study guides, and other printed materials by mail to students, who, in turn, gained credit when they completed the required assignments. This was followed by Open Universities that used audio-conferencing with telephone handsets, speakerphones, and an audio-bridge to connect multiple telephone lines. Also, radio broadcasts, recorded media such as radio, television, audio/video tapes, and telephones were used to provide opportunities for students in rural, isolated areas. The next level of distance learning emerged with the introduction of interactive and digital technologies that delivered educational projects to students via interactive television, electronic networks, and computer-based multi-media systems or synchronous technology. **Today's most current level of distance learning offers both synchronous and asynchronous audio, video, and graphic communication through the use of electronic networks. The further improvement of interactive technologies by using cable, compressed video, and video teleconferencing has provided an expansion of the traditional classroom experiences to distant students.**

The classroom technologies generally include desktop computers with modems to access the Internet, electronic mail, and on-line literature data bases (in this case, nursing literature). Video teleconferencing technology allows the faculty member at the control station to control and view the types of images. This allows split screens and two-way interactions including images, sound, and motion. Students at the remote sites can see, hear, and observe the instructor by using a keypad with a built-in microphone; and, they can interact with the instructor or students in other locations. Interactive video teleconferencing requires: 1) a communication network (satellite or a land-line telephone); 2) interactive

equipment on site; and, 3) that transmission be communicated at a certain time to specific distant locations. Simply stated, distance learning and/or education differs from traditional higher education classroom instruction in two ways: students and teachers are separated by geographic distance; and, electronic technology is used for communication between the instructor and students.

The Internet has revolutionized distance learning education. Primarily, the Internet is used as a reference, or as a means of searching and obtaining information from multiple resources, on a specific topic of interest. The Internet, as a means of electronic communication, allows one to attach or retrieve multiple attachments. Thus, it is an easy process to transmit many requirements for the distance learning course. For example, the course syllabus, assignments, and required readings can be transmitted as e-mail attachments, making the distribution of information a rapid process and eliminating the time and expense required for duplicating the documents. Current software allows for controlled, on-line examinations; and, relevant course data can also be collected for outcome evaluations.

The Restructuring of the Department of Veterans Affairs Health Care System Called for an Increase in the Number of Nurse Practitioners. The Department of Veterans Affairs, Veterans Health Administration/Department of Defense (VA/DoD) Distance Learning Program was initiated following an objective issued by the Under Secretary for Health, Department of Veterans Affairs, which called for a 200 percent increase in the number of primary care providers in the VA medical centers. This goal is in keeping with recommendations by national nursing organizations to increase the number of advanced practice nurses. As early as 1994, the National Advisory Council on Nurse Education and Practice for the Health Resources and Services Administration of the Department of Health and Human Services had identified the need to upgrade the knowledge, skills, and abilities of the existing registered nurse work force to match the practice requirements within the health care systems. As late as 1999, the American Association of Colleges of Nursing also reported that the demand for advanced registered nurses continues to increase. Current demands across the country are for advanced practice nurses who can deliver a high complexity of care across the projected life-span of their patients within an integrated health care system. There is a shortage of advanced practice nurses who are qualified to assess, diagnose, and manage patients in primary care settings.

In response to the goal established by the Under Secretary for Health, the Department of Veterans Affairs Nursing Strategic Healthcare Group of the Office of Patient Care Services determined that one effective solution would be to assist currently employed, master's-prepared VA nurses to obtain new knowledge and skills as nurse practitioners. Since these VA employees already hold full-time positions, educational programs that complemented their existing work schedules would be most cost-effective.

At the same time, the national need for increased numbers of nurse practitioners was reflected in existing Nurse Practitioner Programs - many of which were oversubscribed and preferred full-time students. In some cases, nurses seeking additional education were often required to travel great distances or to relocate. In most cases, the demands of full-time course work, travel time, and/or relocation would force potential VA nurse practitioner students to reduce or eliminate their work responsibilities at the VA medical centers. For organizations, such as the Department of Veterans Affairs, which are in the process of rapid and dramatic change in their approach to health care delivery, the traditional model of attaining nurse practitioner education was difficult. One promising solution was to capitalize on the increasing benefits of communication technology and to approach nurse practitioner education from a distance learning perspective.

A 1996 survey completed by 155 VA medical centers indicated that nearly 750 master's-prepared clinical nurse specialists would be interested in enrolling in a post-degree, nurse practitioner certificate program if it were offered via distance education. Once individuals from this group were enrolled in a post-degree certificate program, they could complete additional courses, building on their current academic preparation, to become certified nurse practitioners and be prepared to provide out-patient and preventive health care. To accomplish this re-education process, the Department of Veterans Affairs needed to partner with an educational institution. At the time that the VA/DoD Distance Learning Nurse Practitioner curriculum was being designed, VA project managers could identify no programs that offered all course work via distance learning. Rather, distance learning programs in nursing required their students to spend several weeks each summer at the host campus to complete the clinical practica. Such requirements would have significantly increased program costs for the Department of Veterans Affairs. This review process led to the coordination and collaborative efforts which took place between the Department of Veterans Affairs and the Graduate School of Nursing (GSN), Uniformed Services University of the Health Sciences (USUHS). The GSN would provide a curriculum to transition VA clinical nurse specialists into the role of adult nurse practitioners. **The USUHS GSN curriculum was unique, and a national first, because it built on the excellent resources of the Department of Veterans Affairs to implement well-defined, closely-monitored, clinical practica offered concurrently with didactic content provided by the fully-accredited Graduate School of Nursing in Bethesda, Maryland.**

The GSN Family Nurse Practitioner Program meets or exceeds all standards established by the National Organization of Nurse Practitioner Faculties. An Adult Nurse Practitioner Post-Master's Program was designed to meet the VA's patient care needs with a focus on adult health. Upon completion of the program, VA graduates are prepared to take the appropriate national certification examination in their nursing specialty. Twenty-one graduates of the May 1999 virtual graduation passed their certification examinations to date. **It was anticipated, and generally proven to be correct, that such a program would be cost-effective and would enhance staff morale through the reeducation and the retraining of a loyal cadre of long-term, competent VA staff.**

The Department of Veterans Affairs and the USUHS Graduate School of Nursing. Department of Defense, Form a Partnership. During late 1996, the GSN and the VA Nursing Strategic Healthcare Group entered into a working partnership. They agreed to conduct a two-phase project. Phase I would consist of one course to test the feasibility of the project; Phase II would contain the remainder of the curriculum study. The GSN agreed to educate the VA master's-prepared registered nurses to become adult nurse practitioners through the use of distance learning technologies.

The Graduate School of Nursing agreed to:

- 1) determine the length of the program;
- 2) establish the curriculum;
- 3) allocate credit for the courses;
- 4) assure that graduates were qualified for certification;

- 5) develop policies for the transfer of credit for prior courses;
- 6) adjust and modify institutional policies to accommodate the VA civilian registered nurse students;
- 7) validate appropriate faculty from VA and the GSN to instruct in the Program (each had to hold at least a Master's Degree, preferably in Nursing, be prepared in a nurse practitioner specialty, and be currently certified);
- 8) provide support staff; and,
- 9) procure resources for the new program.

The Department of Veterans Affairs agreed that it would:

- 1) utilize its national telecommunication network for the Distance Learning Program;
- 2) obtain the distance learning sites at the VA medical centers;
- 3) select the students and submit candidates to the GSN for evaluation of academic requirements;
- 4) provide educational resources for the students such as library books and computers;
- 5) approve the assignment of VA employees to serve as on-site preceptors and to coordinate with the GSN in the Distance Learning Program; and,
- 6) provide the VA portion of the funding for the Project.

Each VA medical center with a distance learning site would provide the following:

- 1) an educational coordinator to administer the program; and,
- 2) a Master's-prepared nurse practitioner preceptor to arrange and supervise the clinical aspects of the program.

Following a survey of its potential medical centers and students, the Department of Veterans Affairs determined that the didactic courses would be scheduled after working hours. The classes would be designed to parallel the on-campus GSN courses and would be held twice a week for two hours, with a third hour conducted as a laboratory activity by the lead preceptor at the individual VA sites.

Phase I - The Pilot Project Test Class. Early in 1997, the USUHS Graduate School of Nursing, in cooperation with the Department of Veterans Affairs, initiated Phase I, the Pilot Project Test Class, Phase I was conducted at two VA medical centers located at Atlanta, Georgia and Fayetteville, North Carolina with a total of 11 students. The class was taught using the GSN curriculum for basic and advanced health assessment. It was offered as a two-hour didactic course with a one-hour laboratory practicum on a specific physical assessment content area. The preceptors at each VA site conducted health assessment laboratories, demonstrated "hands-on" technical skills, and supervised basic clinical

experiences. The Distance Learning Project Test Video Teleconferencing Course was transmitted from the National Naval Medical Center's (NNMC) Naval Tele-Training Center located in Bethesda, Maryland. Staff from the VA Nationwide Teleconferencing System and the National Naval Medical Center worked together throughout the course to facilitate the transmission of classes which were conducted from 4:30 to 6:30 p.m., two times a week. This type of transmission was selected because the Department of Veterans Affairs has an efficient nation-wide teleconferencing network that uses telephone land-lines to connect all of the major VA medical centers. The teleconferencing sites employed PictureTel video teleconferencing systems equipment to transmit the live classes. While the pilot test class was being conducted, the GSN was in the process of planning for and installing such equipment on the USUHS campus. The pilot test class was designed to determine and test technical capabilities and teaching strategies, and to identify the most successful technological media that could be transmitted using video teleconferencing techniques. It also tested reception at the pilot VA sites. The pilot test class allowed the faculty to evaluate the students' comprehension of the didactic portion of the course content.

The evaluation of Phase I consisted of input from the GSN and the VA administration, faculty, and students. The VA preceptors reported that there was no discernable difference in the capabilities or skills of the distance learning students as compared to other students from traditional campus-based nurse practitioner programs. Eight of the eleven students completed the course on time, with three students requesting a one-month extension (which was granted) to meet their clinical requirements. The students evaluated both the course content (flow, depth, and relevance) as well as the technology (audio, video, and transmission). The student feedback was clearly positive. At the completion of Phase I of the Distance Learning Project, the GSN and the VA administrators, faculty, and staff reviewed all of the evaluation data. Based upon that review, all parties concluded that the Distance Learning Pilot Class Project was successful. Because of personal reasons and overseas transfers, four of the members of the test pilot class were unable to proceed to Phase II.

Phase II - The Twenty-Month Distance Learning Program - Curriculum and Faculty. Following the success of Phase I, in the Fall of 1997, the Graduate School of Nursing and the Department of Veterans Affairs implemented a twenty-month program to prepare advanced practice clinical nurse specialists to diagnose and manage primary healthcare problems of adults and to pass certification as adult nurse practitioners. Phase II, the Adult Nurse Practitioner Post-Master's Program, also known as the VA/DoD Distance Learning Program, provided education or training courses at remote (off-campus) locations via audio, video or computer technologies. Phase II began with 35 students at the following VA medical Centers: Atlanta, Georgia; Baltimore, Maryland; Bronx, New York; Charleston, South Carolina; Fayetteville, North Carolina; Leavenworth, Kansas; San Diego, California; and, West Los Angeles, California. Phase II took place in conference rooms on the USUHS campus which were fully equipped for teleconferencing. The curriculum, developed by modifying the existing GSN Family Nurse Practitioner curriculum, emphasized 1) comprehensive physical and psycho-social assessment; 2) decision-making processes in both acute and chronic health conditions; and, 3) health maintenance care. The Program consisted of nine courses which stressed both health promotion and disease prevention. There were 29 credits of didactic content and a minimum of 560 hours of clinical experience over five semesters or 20 months. Students who were already certified in a sub-specialty could obtain a waiver for some, or all, of the clinical and didactic requirements for that specific specialty area.

All of the nine courses were presented using different video teleconferencing educational strategies. Generally, the courses consisted of didactic lectures using a computer-generated video shown by the instructor. The Department of Veterans Affairs assigned two individuals to serve as faculty on the

Project: **Angela Martin, CRNP, and Kathleen Burkhart, CRNP.** Both individuals have extensive experience in distance education and as nurse practitioners. The didactic content, readings, and references were mailed to the students prior to the class lecture (until e-mail transfer could be used); all classes were taped. Those tapes were then provided to students who could not attend the class. All lectures included dialogue between students from all eight of the remote sites. Most lectures also included slide shows, overhead displays from the textbooks, anatomical models and/or a live examination of a patient model. The students were responsible for presenting clinical material relevant to the selected topics and for preparing written assignments. Supervised clinical experience took place at all eight sites; the site preceptors identified medical clinics, health maintenance organizations, mental health clinics, retirement centers, acute care, and other settings where the students could receive positive clinical experience. Written correspondence and supervised clinical experience in the students' home areas were also included in the curriculum.

Students received a broad foundation of educational preparation in adult health, advanced nursing practice, nursing theory, and nursing research. In addition, health assessment, primary prevention, health maintenance, clinical decision making, illness management and pharmacology (including writing prescriptions) were emphasized in the classroom and clinical practicum. The faculty for the Distance Learning Program were primarily certified nurse practitioners and basic science faculty from USUHS. Each faculty member had to have a Master's Degree and be prepared with a specialty as a nurse practitioner, with current certification. The partnership between the Department of Veterans Affairs and the USUHS Graduate School of Nursing included the agreement that the GSN would provide the academic rigor for the new program. The GSN would also monitor the teaching program/curriculum and conduct evaluations to ensure that all standards for certification were met. Preceptors were located at each site to ensure that the curriculum presented by the distance learning classroom at USUHS was comprehended and that questions were resolved immediately at each of the sites. Each remote site had a video teleconferencing capability and an educational classroom, access to an on-line computer, and current advanced nurse practitioner bibliographic and library materials. And, all preceptors working with the distance learning program were appointed to the GSN Department of Nurse Practitioner as adjunct clinical faculty following University protocol and policy.

Site visits were required by the Project staff to ensure that the academic supervision and clinical experiences of the Distance Learning Program met National League for Nursing and Commission on Collegiate Nursing Education accreditation requirements. Each of the eight sites were visited by a Project staff team consisting of the GSN faculty member responsible for the specific site, the GSN Project coordinator, the Chair of the GSN Nurse Practitioner Department, and the VA Project coordinator. The four member team was responsible for ensuring that each VA site had: 1) appropriate space for the educational project classroom; 2) a practice laboratory; 3) appropriate video teleconferencing equipment to include technical support; 4) current materials in the library to include on-line literature searching capabilities; 5) adequate computer support; 6) appropriate clinical experience with qualified preceptors; and, 7) support from the VA medical center's administrative, medical, and nursing departments. Each site visit gave students and administrators an opportunity to discuss the quality of the educational activities and to identify any difficulties that may have arisen.

During the twenty-month program, each of the lead preceptors and coordinators attended VA-sponsored workshops facilitated by the GSN faculty. Additionally, the GSN faculty offered in-service education on 1) the fundamentals of distance learning; 2) the role responsibilities of the coordinators and preceptors; and, 3) the evaluation of the students' clinical performance.

Graduates of the VA/DoD Distance Learning Program are prepared to deliver, coordinate, and evaluate high-quality care; advocate for vulnerable individuals and groups; and, provide leadership in the health care delivery systems through the promotion and maintenance of adult health. Early graduates of the Program are expected to assume clinical positions within the Department of Veterans Affairs. And, graduates are eligible to sit for the American Nurses Association Credentialing Examination for Adult Nurse Practitioners.

Technology Used in the Distance Learning Program. The VA/DoD Distance Learning Program is composed of didactic course work delivered via state-of-the-art distance learning technology, including interactive video teleconferencing and the Internet. The GSN extended its network of high-speed, digital telephone lines from USUHS's compressed-video classroom to the VA telecommunication center in Martinsburg, West Virginia (the Hub) which in turn is linked to the various distance learning sites at the VA medical centers. The first distance learning program reached eight VA sites. The graduation of the first class provided both the Department of Defense and the Department of Veterans Affairs the ability to: 1) critique and assess aspects of the teaching/learning process; 2) evaluate existing technological capabilities; and, 3) determine the cost (or cost-avoidance) of implementing such a program.

During the twenty-month program, the Department of Veterans Affairs was in the process of upgrading its technological capacity. As a result, most of the VA medical centers were equipped with video teleconferencing capabilities. Several computer and educational technologies were immediately required to ensure the success of the project. These included an upgrade of the file server at the Hub in Martinsburg, West Virginia, the establishment of a video teleconferencing unit at USUHS, and, the confirmation of video conferencing capability at each site. All was accomplished.

The GSN used special equipment that was linked to the teleconferencing unit such as: a "smart" electronic camera that could focus on the lecturer; a graphical computer (via a laptop computer); slide shows (via a slide projector); tape sequences of sound and motion (using a VCR); the demonstration of anatomical models (via a separate camera that could focus on the model); and, an overhead document camera for paper illustrations. A summary of student evaluations, clinical experiences, and faculty reviews concludes that the students, for the most part, were pleased with the technology; they were able to learn the material and grasp the master course requirements without distractions or interference resulting from the technology. **Plans are under way to adapt the course work for the World Wide Web, which will allow students to undertake course-related collaborative projects and to take examinations over the Internet.**

The First Advanced-Level Virtual Graduation in the Department of Veterans Affairs and the Department of Defense. Twenty-six students, through a virtual commencement exercise, graduated from the VA/DoD Distance Learning Program on May 18, 1999. An additional student completed requirements during August of 1999, bringing the total to 27 students who have graduated from the program. This graduation marked the first virtual advanced-level graduation by either the Department of Veterans Affairs or the Department of Defense. **Since the first graduation, twenty-one graduates have successfully passed their certification examinations.** The remaining graduates are scheduled to take their examinations within a two-year period from the date of their graduation. The coast-to-coast, virtual graduation took place at eight Veterans Affairs medical centers: Atlanta, Georgia; Baltimore, Maryland; Bronx, New York; Charleston, South Carolina; Fayetteville, North Carolina; Fort Leavenworth, Kansas; San Diego, California; and, West Los Angeles, California. The Distance Learning Program was

successfully implemented due to extensive coordination by the following individuals: the Dean, GSN; the GSN Distance Learning Advisor; Chairs of the GSN Nurse Practitioner and Research Departments; the GSN faculty; the Director of the USUHS Center for Informatics in Medicine; the VA Program Director; and, the tremendously dedicated on-site VA preceptors/coordinators.

The Distance Learning Program Admitted its Second Class of Distance Learning Students in 1999. The GSN Adult Nurse Practitioner Post-Master's Program admitted its second class of students during 1999. Thirty-five students are enrolled as members of the Class of 2001. The nine VA distance learning sites are: Buffalo, New York; Cleveland, Ohio; Atlanta, Georgia; Detroit, Michigan; Los Angeles, California; Milwaukee, Wisconsin; San Juan, Puerto Rico; Shreveport, Louisiana; and, Washington, D.C.

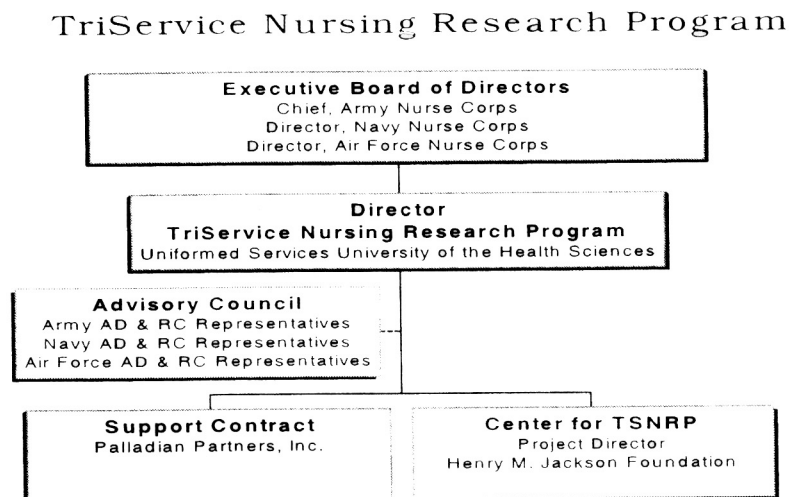
Summary - A Successful Collaborative Effort. There is no way to immediately measure all of the benefits resulting from this successful distance learning project. **The experience** gained by both the Graduate School of Nursing and the Department of Veterans Affairs **will allow future projects in distance learning to benefit from the lessons learned and the technologies tested during the twenty-month, VA/DoD program.** Outcome evaluations will be continued with the early graduates and their supervisors. Fine tuning will continue throughout the original curriculum. The technology will continue to evolve to reflect the rapid growth of the field. The difficulties faced by the project coordinators in creating a new program utilizing the latest technologies were numerous and challenging; the GSN and VA Departments, faculty, staff, and students who succeeded in doing so, are well pleased with their initial results and continue to work to improve their educational efforts in distance learning. (This report was also submitted to the Congress as the Department of Veterans Affairs and the Department of Defense response to a legislative directive for a summary report on the distance learning program.)

THE TRISERVICE NURSING RESEARCH PROGRAM

Background. Military nursing's unique perspective for the care of its beneficiaries requires scientific investigation and the rapid application of study results in order to respond to the mission of the Military Health System. Military nursing research aims to advance the science of military nursing in support of mission readiness and deployment, to improve the health status and quality of life of diverse military personnel and their beneficiaries, and to provide optimal nursing care in settings throughout the world. **The TriService Nursing Research Program (TSNRP) is a Congressionally authorized program targeted to support research conducted by military nurses (S.R. 102-154). The TSNRP is a program under the direction of the Chief of the Army Nurse Corps and the Directors of the Navy and Air Force Nurse Corps; the TSNRP sponsors research focusing on military-unique issues in clinical practice, health care delivery, and readiness.**

Mission. The TriService Nursing Research Program's primary objective is to enhance the quality of nursing for the Armed Forces by advancing the knowledge of the practice of military nursing. TSNRP has designated four areas for research: clinical practice focused on military beneficiary populations; military health care systems; clinical care in military unique environments; and, military personnel deployment and readiness. Each of these areas can provide valuable clinical outcomes to enhance care delivery systems for soldiers, sailors, airmen, and their families.

Structure of the TSNRP.



Center for TSNRP. The Center for TSNRP was developed to support and extend the programmatic activities of the TSNRP. The goals of the Center, established through a grant, include: creating a mechanism to ensure the development of the capacity and quality of military nursing researchers; and, facilitating the identification of research priorities and programs for military nursing research in keeping with the health care needs of the military community. The Executive Board of Directors and the Advisory Council approved the creation of the Center at the end of Fiscal Year 1997. Investment in establishing a Center was in alignment with a recommendation from the 1996 Institute of Medicine Report on the TSNRP and was considered a mandate for the program's future success; the grant approved to support the center totalled \$1.2 million. For research to become useful in practice and policy decision-making, it is critical to further develop the TSNRP infrastructure. In a marked departure from the first years of operation, the Center is to be used to vitalize the research foundation of the program. In May of 1999, a project director for the Center was hired and efforts to assess TSNRP operational needs and Center direction are well underway.

Special 1999 Initiatives.

Capacity Building. Research and Proposal Preparation Skills (RAPPS) is a distance learning course designed to improve military nurses' grant preparation and proposal development skills to enable them to successfully compete for research funding. The course development and initial pilot testing was completed in August of 1999. Formal enrollment has commenced. This course is available on-line twice each year to Army, Navy, and Air Force nurses around the world. The site can be reached at www.rapps.son.uab.edu.

Skills Sustainment Initiative Grants. The purpose of this initiative is to assist military nurses in acquiring and/or updating the clinical, technological, and decision-making skills required to provide patient care under deployment operations. To promote readiness, the Air Force Nurse Corps was awarded \$394,828 during 1999 to develop, implement, and evaluate a competency-based education program that defines "wartime" competencies. Other studies awarded to Army and Air Force nurses focused on such topics as "Evaluation of a Virtual Reality Simulator in Sustainment Training," "Identification of Trauma Skills for Nursing Personnel," "Evaluation of Staffs Retention of BCLS and ACLS Skills," "Validating Mobilization Competencies for Air Force Clinical Nurses," and, "Wartime Competencies and the United States Air Force Nurse: Training for Sustainment."

Investigator-Initiated Grant Awards. Over 170 research studies in basic and applied science have already been funded. These studies have addressed the TSNRP's target research areas such as readiness and deployment, evacuation and transportation, health promotion and disease prevention, spousal and child abuse, and women's health issues. Study areas that have been funded include burns, breast cancer, wound healing, pain, tobacco use, depression, Reserve readiness, pregnant soldier intervention programs, informatics, econometrics, managed care environments, tele-health, and distance learning. This year, twelve grants were awarded to study these issues. Examples of the studies include: "Preventable Hospitalization in Older Military Retirees," "Dietary and Exercise Intervention to Improve Readiness," "Management of HTN Patients by CNS in Military Settings - A Supplemental Study," "Skin Interface Pressure Associated with the NATO Litter," "Effects of Tele-health Augmentation of a Home Nursing

Care Program for Women with Children at Risk for Child Abuse and Neglect," and, "Outcomes from a Nurse-Managed COPD Rehabilitation Program."

Training Grants. TSNRP is dedicated to supporting junior investigators entering into the research arena. Training grants is a funding mechanism to provide researchers support to develop research and grant skills for future grant submissions. Two awards were made in 1999: "The Lived Experience of Nurses Stationed Aboard Aircraft Carriers," and "Tele-Nurse Service is a Military Managed Care Setting."

Dissemination. Dissemination of findings to nurses in a global setting is a particular challenge being met by this program. The first dissemination conference, held in August of 1997, brought together nurse researchers from all three Services and from across the world. The conference provided a forum for exchanging ideas, discussing critical issues, and reporting on research findings. Findings from the TSNRP-funded grants are also presented at various conferences, including the annual conference for the Association of Military Surgeons of the United States. Dissemination is imperative for the success of the program. Results of studies have been reported in refereed nursing and other health journals and by the national news media. Also, the Electronic Military Uniformed Services Nursing Research Data Base provides retrieval capabilities for the TriService Nursing Research Program Grant Reports which are found in the special interest category of the CINAHL data base.

Response







IV. GRADUATE EDUCATION PROGRAMS

ESTABLISHMENT

The Uniformed Services Health Professions Revitalization Act (Public Law 92-426) Established the University in 1972 and Directed the Establishment of Graduate Education Programs. Following Congress' establishment of the University and the School of Medicine in 1972, the early founders understood that in order to gain and sustain accreditation, Graduate Education Programs had to be structured within the School of Medicine. The Liaison Committee on Medical Education (LCME) accreditation process is designed to certify that a medical program meets prescribed standards. It is recognized by both the LCME and the USU Board of Regents that predoctoral graduate programs in the basic medical sciences leading to the Doctor of Philosophy Degree or to appropriate degrees at the Master's Degree level are essential components of a School of Medicine dedicated to excellence in medical education.

The Establishment of the Office of the Associate Dean for Graduate Education. In accordance with the requirement to ensure the academic excellence of the newly established Graduate Education Programs, the Dean of the USU School of Medicine (SOM) appointed **Colonel John W. Bullard, Ph.D., USA, (retired), as the Assistant Dean of Graduate and Continuing Education Programs.** Dr. Bullard was recognized as one of the Army's experts on educational affairs, and in particular, continuing education. He had been a Medical Service Corps officer who served in Vietnam and had been previously assigned to the Army Academy of the Health Sciences, the Office of the Surgeon General of the Army, and the Office of the Assistant Secretary of Defense for Health Affairs. The SOM admitted its first graduate students in 1977. During the early 1980's, in an effort to highlight the contribution of the Graduate Education Programs, Dr. Bullard began a research symposium to showcase the research contributions of the graduate students. Following Dr. Bullard's death in November of 1990, the Office of the Dean, SOM, with the concurrence of the USU President and Board of Regents, and in recognition of the importance of the Graduate Education Programs, determined that the leadership position for the Graduate Education Programs should be separated from the Continuing Education Programs and a subsequent search was held for the position of Assistant Dean for Graduate Education. **Michael N. Sheridan, Ph.D., Professor, Department of Anatomy and Cell Biology,** was selected as the second Assistant Dean for Graduate Education in 1991. The Dean, SOM, elevated the position to Associate Dean for Graduate Education in 1993; Dr. Sheridan continues to serve in that position and to provide leadership for the Office of Graduate Education.

Graduate Education Programs Are Provided in Thirteen Disciplines. At USU, graduate programs are offered in the following disciplines: 1) Anatomy and Cell Biology; 2) Biochemistry; 3) Clinical Psychology (military students only); 4) Emerging Infectious Diseases (established during 1999); 5) Medical Psychology; 6) Microbiology and Immunology; 7) Molecular and Cell Biology; 8) Neuroscience; 9) Pathology (Comparative Pathology and Molecular Pathobiology); 10) Pharmacology; 11)

Physiology; 12) Medical Zoology; and, 13) Public Health. Master's Degrees are offered in Public Health; Tropical Medicine and Hygiene; Military Medical History (military students only); and, Molecular and Cell Biology (military students only).

The Graduate Education Committee and Department Reviews Ensure the Quality of the Programs. Each departmental or interdepartmental Graduate Education Program is managed by a Program Director. The Graduate Education Committee (GEC) is composed of all of the Program Directors, the Associate Dean for Graduate Education, the Vice President for Teaching and Research Support, two members of the faculty appointed by the Dean, SOM, and a Graduate Student Representative. The GEC is responsible for periodic reviews of the policies and procedures of each Graduate Education Program, reviews of academic records and other aspects of graduate student standing, and monitoring of the overall quality of graduate student life at the University. In addition, all graduate courses must be submitted to the GEC for consideration and approval prior to offering (over 200 individual graduate education courses have been established by the participating faculty). Significant changes to previously approved courses must also be considered by the GEC prior to incorporation. In addition, departmental faculty annually review and update the graduate course offerings for each program. Some departments rely upon medical school course offerings for their Graduate Education Program curricula, supplemented by graduate course offerings. Some medical school courses have been subdivided into individual graduate offerings, allowing graduate students to take appropriate parts of a larger course. The GEC makes recommendations on its areas of responsibility to the Dean, SOM, through the Associate Dean for Graduate Education. Following the 1999 SOM Self-Study, no major revisions were recommended for the Graduate Education Programs.

MISSION

"The USUHS shall: 4.3. Grant applicable advanced academic degrees; establish postdoctoral and postgraduate programs, and technological institutes; conduct medical readiness training and continuing education for members of the Uniformed Services in the health professions; and prepare individuals for careers in the health professions in the Uniformed Services."

DoD Directive 5105.45, dated May 17, 1999, page two.

Mission Direction Calls for the Development of Graduate Education Programs. The goal of graduate study at the School of Medicine is to develop independent scholarship, originality, and competence in research, teaching and professional service. This goal has guided the development of the Graduate Education Programs, which are designed for outstanding students committed to careers in the basic medical sciences, public health, or tropical medicine. The purpose of the Graduate Education Programs and their relationship to the School of Medicine were defined in the founding documents which recognized that superior Graduate Education Programs in the basic medical sciences are an essential component in the accreditation process for a school of medicine.

Graduate Programs Benefit the Military Health System. Graduate programs in the basic medical sciences benefit the USU and the Military Medical System (MHS) as follows: 1) the graduate programs provide training opportunities for qualified active duty personnel of the Uniformed Services who receive authorization to participate in the USU graduate training programs under the sponsorship of their parent service; 2) graduate students have the opportunity to become aware of the outstanding investigative programs that are ongoing in the Department of Defense laboratories in the Washington, D.C. area; it is anticipated that the research institutes within the Department of Defense will be able to recruit well qualified graduates on the basis of the mutual knowledge and respect developed during the graduate students' interaction at USU; 3) the academic environment of the School of Medicine is maintained at a high level exposing the uniformed physicians-in-training to the disciplined methods of critical scientific inquiry that are the rational basis of problem solving in medical science; and, 4) graduate students participate as teaching assistants and assist in the performance of instructional and investigative efforts that are essential to the mission of the School of Medicine and significant to the Military Health System (MHS).

Responsiveness to the Needs of the Services. A specific example of the USU Graduate Education Program's direct response to the needs of the Surgeons General is the creation of a new program for the Master's Degree in Military Medical History. This program is an outgrowth of the Fellowship in Military Medical History established at USU in 1983 to train instructors of history for the United States Army Academy of the Health Sciences. A request was received from the Medical Service Corps of the Army to establish a degree granting program so that officers could continue to be used for lessons learned and history education assignments as teachers at the Army Academy. The program of study is currently limited to officers in the Medical Service Corps of the Army; two degrees have been granted, one in 1997 and one in 1998.

The Development of Independent Scholarship. The goal of graduate study in the basic medical sciences at USU is to develop independent scholarship, originality, and competence in research, in teaching, and in professional service to the Nation. **The Graduate Education Programs are designed for outstanding students with a strong commitment to permanent careers in the basic medical sciences and potentially, in the federal government.** Within each Ph.D. program, an individualized course of study is designed for each student to meet his or her specific needs **(over 200 individual graduate education courses have been established by the participating faculty of USU).** The graduate programs are open to qualified civilian and uniformed personnel. Students accepted for graduate study are enrolled on a full-time basis. They assist in the performance of the instructional and investigative efforts that are carried out at the University. Active duty military and uniformed services personnel must obtain the approval and sponsorship of their parent Service; they also incur an obligation for additional service, in accordance with the regulations of the parent Service which govern sponsored graduate education. **Most of these officers will complete careers in their parent Services and use their graduate education and training to fulfill specific assignments for their Surgeons General and the MHS.**

Research Facilities Are Well Equipped and Support the Graduate Education Programs. The Graduate Education Programs are conducted in facilities on the campus of USU. Well-equipped, modern laboratories are available to support the wide variety of research projects directed by the faculty in the basic medical sciences. Special resources include high resolution transmission and scanning electron microscopes, video-based computer graphics and confocal microscopy, a central resource facility providing custom synthesis of oligonucleotides and peptides, biohazard containment laboratories, a centralized animal resources facility, a medical library, computer support to include orientation to web sites and the Internet, and a learning resources center.

Research Day and the Graduate Student Colloquium. The USU Faculty Senate has sponsored an annual Research Day since 1994 that is designed to promote faculty interactions and emphasize the importance of the research contributions of the University. It is composed of an afternoon symposium followed by a full day of posters and platform presentations of abstracts submitted by faculty, trainees, and students in the university community. For the past several years, the annual Graduate Student Colloquium has been held concurrently with Research Day. The Colloquium features the research accomplishments of the USU graduate students and includes a competition for the best platform and poster presentations. Awards are presented at the USU Research Day dinner that also features an invited keynote address, the John W. Bullard Lecture, presented by a distinguished scientist and educator. This forum is intended to highlight the Graduate Education Programs and to foster an intellectual exchange between graduate students and the entire university community.

ACCREDITATION

Academic Excellence and Uniformity Ensure Accreditation. To ensure academic excellence within the Graduate Education Programs, in addition to the oversight and reviews provided by the GEC and the academic departments, a series of requirements for the Doctor of Philosophy Degree (Ph.D.) have been established. Some departments have established additional requirements. The minimum residency requirement for the Ph.D. is 36 months of full-time study; but, it may be less if a student holds an advanced degree. All requirements must be completed no later than seven years after matriculation. Formal course work, participation as teaching assistants in the SOM teaching programs, and directed research activities are all components of a student's predoctoral program. Full-time status is defined as 12 or more credit hours each quarter. The minimum course work requirement for the doctorate is 48 credit hours and the minimum for total academic credit is 144 credit hours. A qualifying examination (comprehensive exam) is conducted and graded by a committee of graduate faculty. A written dissertation based on the original experimental research or an alternative thesis format, differentiated by the materials and methods section and results section, in the form of acceptable peer-reviewed publications is required. A total of 24 credit hours of graduate course work taken at other academic institutions, either before admission to the SOM or during study at USU, may be transferred, provided such courses are equivalent to courses at the SOM and are approved by the graduate faculty of the specific program and the Graduate Education Committee. Some department's Ph.D. programs of study encompass an independent project whereby the student would receive a Master's Degree while pursuing the Ph.D. Requirements are designed to ensure academic excellence and uniformity in degree programs across the departments. An approved thesis is required of all candidates for the Master of Science Degree. A thesis is not required for the Master of Public Health or the Master of Tropical Medicine and Hygiene, but an independent project paper must be completed to fulfill requirements for those degrees.

* * * * *

Accreditation of USU Graduate Programs in Public Health Is Extended through December 31, 2003. The Council on Education for Public Health (CEPH) is the recognized accrediting body for graduate schools of public health and graduate programs in community health education and community health/preventive medicine. Following a site-visit during 1998, the CEPH Board of Directors determined on October 3, 1998, to continue the accreditation of the USU Graduate Programs in Public Health through December 31, 2003.

In addition to extensive medical school teaching, the Department of Preventive Medicine and Biometrics (PMB) offers courses of study leading to the Master of Public Health (MPH), Master of Tropical Medicine and Hygiene (MTM&H), Master of Science in Public Health (MSPH), Doctor of Public Health (DrPH), and Doctor of Philosophy in Medical Zoology (PhD) Degrees, all of which were reviewed for accreditation. The MTM&H and doctoral students have undertaken research in affiliated overseas laboratories, including the United States Army and Navy biomedical research laboratories in Bangkok, Thailand; Rio de Janeiro, Brazil; Nairobi, Kenya; Cairo, Egypt; Jakarta, Indonesia; and, Lima, Peru. Given the mission of USU and the importance of prevention to military medicine, PMB is a large and vital part of the medical school and the University. The program was initially accredited by CEPH in 1985, followed by a review in 1991 at which time accreditation was extended for a seven-year term. The current review included a self-study process carried out by program constituents, the preparation of a self-study document, and an on-site visit in mid-June of 1998 by a team of external evaluators. The site visit

team interviewed USU officials, department administrators, program staff, faculty, students, alumni, and community representatives. The CEPH found that ..." the public health programs constitute the largest graduate program and have both visibility and appropriate decision-making prerogatives. The environment is a multi-disciplinary setting which values and supports interactions both within the department and externally to a wide variety of rich intellectual resources within the institution and with federal partners throughout the Washington, D.C. area. **The values of the institution and the philosophy of military medicine are an exceptionally 'good fit' with the values and philosophy that underlie public health and preventive medicine. The program has strong ties to the military community, both locally and worldwide, and the instructional programs have particular relevance to the needs of the uniformed services to which program graduates will return after their training.** The curriculum is quantitatively-oriented and rigorous. There is a well qualified faculty (some 47 full-time, assigned faculty members), augmented by an extensive and impressive list of adjunct faculty (currently totalling 165). Resources are generally excellent, although growth of the program is constrained because of limited space."

Clinical Psychology Program Receives Accreditation. The Department of Medical and Clinical Psychology's Clinical Psychology Ph.D. Program received full accreditation from the American Psychology Association's Committee on Accreditation. The program received its accreditation in record time and will be listed annually among accredited programs of professional psychology in the American Psychologist. The site visit report stressed that "the curriculum is clearly articulated and appropriately sequenced, and the practicums are organized. Well-qualified and accessible, the faculty provides excellent role models for students. Also commendable is the program's commitment to systematic self-evaluation." The program is designed for students with a background in psychology who wish to pursue clinical practice in military settings.

STUDENT AFFAIRS

Selection of Students. A formal application is required of all persons seeking admission to graduate study at USU. Applications and all supporting documentation must be received no later than January 15 for programs beginning in the following August. Applicants must have completed a Baccalaureate Degree Program from an accredited academic institution and take the Graduate Record Examination (GRE) before matriculation at USU. The GRE may be waived if the applicant possesses an advanced academic degree. All graduate students participate on a full-time basis and assist in the teaching and research programs that are integral components of the Graduate Education Programs in which they are enrolled.

20th Commencement - May 15, 1999.

Well over 2,000 family members and guests attended the 20th Commencement Ceremony at The Daughters of the American Revolution Constitution Hall in Washington, D.C., on May 15, 1999. The School of Medicine's Graduate Education Programs awarded 12 Doctor of Philosophy Degrees, 7 Master of Science Degrees, 27 Master of Public Health Degrees and, 2 Masters of Tropical Medicine and Hygiene Degrees. In total, the Graduate Education Programs have now granted 190 Doctor of Philosophy Degrees, 54 Master of Science Degrees, 300 Master of Public Health Degrees, 24 Master of Tropical Medicine and Hygiene Degrees, and 2 Master of Military Medical History Degrees.

The 1999 Graduate Student Award. The Graduate Student Award was presented to **Matthew Rahman, Ph.D.** This award was presented during the 1999 USU Graduation Ceremonies to recognize this graduating student for his outstanding and exceptional service rendered to the student body of the F. Edward Herbert School of Medicine and USU. During the graduation ceremonies, Dr. Rahman received a Doctor of Philosophy for his work in the Neuroscience Program. This award recognizes Dr. Rahman's academic achievement, participation in the academic and intellectual life of the community, and contributions to the welfare and morale of other graduate and medical students.

The Henry M. Jackson Foundation Fellowship in Medical Sciences Award. The Henry M. Jackson Foundation inaugurated a Foundation Fellowship to provide stipend and travel support for an outstanding graduate student during the terminal year of his/her program of study at the Uniformed Services University. The Fellowship is awarded annually to a USUHS graduate student who is expected to complete research and defend the dissertation in sufficient time to participate in commencement activities. The 1999 Award was presented to **Patrick Awenowicz, Ph.D.**, from the Neuroscience Program.

The 1999 Ford Foundation Predoctoral Fellowship. **Ms. Nicole Vaughn**, a graduate student in the Department of Medical and Clinical Psychology, was awarded a 1999 Ford Foundation Predoctoral Fellowship. The Fellowship provides a maximum of three years stipend support as well as an institutional award. The selection for this prestigious award reflects Ms. Vaughn's scholarly competence as well as the promise that she will show future achievement as a scholar, researcher, and teacher in an institution

of higher education. Over 75 predoctoral award applications were reviewed by panels composed of highly qualified scientists, engineers, and humanities scholars from across the Nation.

Three Honorary Degrees Were Presented During the 1999 Commencement Ceremonies:

Oliver H. Beahrs, M.D., is a Professor of Surgery, Emeritus, Mayo Medical School, Rochester, Minnesota. Dr. Beahrs also serves on the USUHS Department of Surgery Advisory Board. From 1942 to 1946, Dr. Beahrs served on active duty in the Navy; he is a retired Captain in the U.S. Naval Reserve. In addition, Dr. Beahrs has been the President of the American College of Surgeons, the President of the American Surgical Association, an internationally recognized Mayo Clinic legend, the senior consultant to the physician to the President of the United States, and an honorary member in 22 professional societies. During this tremendous career, Dr. Beahrs has provided significant support for military medicine. He has been a dedicated supporter of the University and of military medicine in general; he has always been ready to share his tremendous experience and vast knowledge with the University. In light of his outstanding contributions, Dr. Beahrs was presented the Doctor of Military Medicine and Surgery (honoris causa) Degree. Dr. Beahrs also delivered the Commencement Address for the Class of 1999 during which he described the evolution of health care during the 20th Century and the significant role of uniformed medicine.

Sheila P. Burke, MPA, RN, FAAN, received the Doctor of Science in Military Nursing (honoris causa) Degree. During the commencement ceremonies, Ms. Burke, Executive Dean, Lecturer in Public Policy, John F. Kennedy School of Government, Harvard University, was recognized for her career in government as the Chief of Staff, Office of the Republican Leader, U.S. Senate, from 1986 to 1996. In addition, Ms. Burke also served as Secretary of the U.S. Senate in 1995. She is a member of the American Nurses Association, Sigma Theta Tau National Honor Society for Nursing, and the National Academy of Social Insurance. Ms. Burke was also named one of the Outstanding Young Women of American in 1979. She was elected to the Milton Terris Society: The Philadelphia Health Policy Forum in 1983; and, the American Academy of Nursing in 1984. Ms. Burke Chairs the Private Market Technical Advisory Group, National Health Policy Forum; and, Co-Chairs the Project on Incremental Health Reform, Henry J. Kaiser Family Foundation. Throughout her career, Ms. Burke has guided projects that have proven to be beneficial to all Americans, through the enhancement of health education, improvement of medical care to the ill, and the betterment of the lives of the disadvantaged. Her support of USUHS and of military medicine in general was made significant through the esteem that the Congress held for her expertise in the area of health. The honorary degree was presented to Ms. Burke in recognition of her continuous dedication to military medicine and to the University. **Senator Robert Dole** assisted the Dean, Graduate School of Nursing, during the hooding of Ms. Burke.

The Honorable Paul S. Sarbanes, United States Senator from Maryland, was presented the Doctor of Medical Jurisprudence (honoris Causa) Degree during the 1999 USUHS graduation ceremonies. The honorary degree recognized Senator Sarbanes' 38 years of public service, both for the State of Maryland and for the Nation. Since 1961, his commitment to a well-organized and caring government and his concern for those who serve their Nation in the Uniformed Services have won him the sincere respect of the general public, the Military Health System, and the University. The Senator's well thought-out positions have continuously aided in the formulation of national and international policies for the United States Government. Throughout his extended service, the Senator has monitored, supported and recommended essential legislation for both the University and the Military Health System in general. Millions of soldiers, airmen, and Marines, both active duty and retired, have benefited during his extensive career due to his uncompromising commitment to excellence in uniformed medicine. Senator Sarbanes

has become a recognized spokesperson for preserving the lessons learned in military medicine and for elucidating the need for continuity and leadership throughout the Military Health System. He has continuously shared his expertise on the significance of the unique practice of health care in the military. Most significant, his tremendous support has successfully and effectively served to sustain the quality of uniformed health care so vital to medical readiness.

Class of 2003. During July, 1999, 32 students began the Master of Public Health Graduate Education Program; in August of 1999, 18 students started their doctoral work. It is noted that over 200 applicants sought admission to the USU Graduate Education Programs. The student body of the Graduate Education Programs has a total of 118 individuals; with approximately 147 faculty members.

ALUMNI AFFAIRS

Selected Profiles of Graduates from the Graduate Education Programs.

Class of 1984

Robert Elves, Ph.D., USU Doctor of Philosophy Graduate, Department of Pharmacology, is the Chief Scientist and Intellectual Property Director for the Concurrent Technologies Corporation in Johnstown, Pennsylvania. He is responsible for \$250 million in programs and \$29.5 million in assets involved in the transition of emerging technologies to government and industry. His duties include cognizance and accountability for the company's strategic science and technical planning; quality leadership; and, performance related to research and intellectual property protection, marketing and licensing for programs involving 750 employees in 19 national and two international offices. Dr. Elves has provided consultation to a variety of national committees and organizations, including the President's Commission on Risk Assessment and Risk Management, the Office of Science and Technology Policy, and the Department of Energy's Office of Industrial Technologies. During 20 years of research, he has focused on identifying and transitioning emerging technologies to improve products and processes, minimize impacts to employees and the environment, and reduce life-cycle costs.

Class of 1985

Patric Stanton, Ph.D., USU Doctor of Philosophy Graduate, Department of Pharmacology, is the Feil Associate Professor in the Department of Neuroscience and Neurology at the Albert Einstein College of Medicine in the Bronx, New York.

Class of 1989

"My affiliation to USU enabled my career to make an easy transition into human medicine in the advancing field of human infertility."

Mitch Schiewe, Ph.D., Class of 1989, in an interview with Ms. Sharon Willis of the USU Quarterly, printed in the Research Day 1999 issue.

Mitch Schiewe, Ph.D., USU Class of 1989 Doctor of Philosophy Graduate, Department of Physiology, is a pioneer within the United States using the relatively new Intracytoplasmic Sperm Injection (ICSI) technique. In 1978, reproductive medicine introduced in vitro, or test tube, fertilization as a successful means of dealing with tubal sterility. Dr. Schiewe stated that his affiliation with USU enabled his career to make an easy transition into human medicine in the advancing field of human

infertility. His skills in advanced reproductive techniques were in great demand and he was subsequently recruited as a research scientist by the University of California at Irvine. Dr. Schiewe was instrumental in developing the first clinical ICSI program in California in 1992 and was promoted to Associate Professor. He then joined Dr. Richard Marrs, at the California Fertility Associates. He also is affiliated with the University of California at Los Angeles, through the Santa Monica-UCLA Medical Center.

Class of 1996

Lolita Burrell, Ph.D., USU Doctor of Philosophy Graduate, Class of 1996, Department of Medical and Clinical Psychology, recently joined the United States Army. Dr. Burrell said that her decision was a direct result of her positive experiences in the Joint Service environment of USU.

Class of 1999

Major Harry Slife, USA, USU Doctor of Philosophy Graduate, Class of 1999, Department of Biochemistry, is the Laboratory Operations Manager at the Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, Maryland.

FACULTY

The Faculty of the Graduate Education Programs Ensure an Individualized Program Built on Quality Research and Instruction. All departments have sufficient full-time faculty to accommodate the present advising needs for the students in the Graduate Education Programs. Most academic departments reported in the 1999 SOM Self-Study that additional students are desired and could be accommodated without placing undue demand on existing faculty resources. All departments have a faculty/student ratio that provides excellent opportunities for continuous interaction (147 faculty members/118 students). Formal occasions for faculty and graduate student interaction occur through seminars, journal clubs, research laboratory rotations, and courses; opportunities abound for students to interact with faculty on an informal and regular basis.

A faculty actively involved in research is critical to the success of the Graduate Education Programs. Through their research activities, high quality faculty members maintain themselves at the cutting edge of their various disciplines. Thus, they contribute to the research mission of the SOM by making advances in medically related research, and they are also better equipped to function as "state-of-the-art" educators. The productivity of the USU SOM research faculty, the quality of their research, and their ability to successfully compete for extramural and intramural funding are all indications of the success of the USU research mission. The presence of strong Graduate Education Programs contributes to this success and is essential not only for the continued growth of the research activities in the University, but also for the future of medical research and education. The SOM Graduate Education Programs are recognized by the institution as essential to achieving success in the University's research mission. Departments with active and vigorous graduate programs show high research productivity. USU graduate education students regularly present their research at professional meetings and publish their findings in peer-reviewed scientific journals, thus publicizing and promoting the University's reputation. The University's reputation is also enhanced by the success of the graduates to secure postdoctoral positions in highly regarded public and private research laboratories, followed by faculty appointments or positions of responsibility in government research, regulatory agencies, and industry.

1999 F. Edward Høbert School of Medicine Biomedical Graduate Educator Award. As part of the 1999 USU Graduation Ceremonies, **Neil E. Grunberg, Ph.D., Professor, Department of Medical and Clinical Psychology**, received the Biomedical Graduate Educator Award. The award recognizes the outstanding contributions of Dr. Grunberg, a member of the USU biomedical graduate faculty in the School of Medicine. Dr. Grunberg was selected to receive this award because of his demonstrated commitment to graduate education through his extensive and outstanding contributions to the education of students in the graduate doctoral training programs at USU. The award recognizes excellence in teaching, mentoring of graduate students, administering graduate programs, and promoting the interests of graduate education.

V. GRADUATE MEDICAL EDUCATION

ESTABLISHMENT

Background - Graduate Medical Education Programs in the Military Health System. Following their graduation from the School of Medicine, USU physicians are active duty officers in the Military Health System (MHS) and are assigned to serve as residents in the MHS Graduate Medical Education Programs. The length of time served as a resident depends upon the individual specialty areas. Residents in the MHS enjoy unique educational advantages. For example, the uniformed faculty at the military teaching hospitals are all full-time, ensuring a level of involvement in student and resident (GME) education that is unmatched at other settings. The military GME system is second in size only to that of the Department of Veterans Affairs; and, it is committed to medical education at all levels over a broad range of disciplines. The National Capital Consortium (NCC) residents, as well as all other residents in the integrated GME programs throughout the Military Health System, significantly benefit from the dedicated uniformed faculty and staff who provide educational GME programs and training at the military medical centers.

The military resident, in most programs, also serves as an educator or trainer of medical students and junior residents. This proves to be a unique growth opportunity; and, most often, the resident comes to understand that teaching is actually an advanced expression of learning. Preparation for student lectures and teaching rounds is a reiterative process that consolidates the resident's own base of medical knowledge. The USU medical students and the more junior NCC residents are the indirect beneficiaries of the senior resident's training as they observe and participate in conferences, activities and clinics directed toward their education.

The School of Medicine Office of Graduate Medical Education (GME). The SOM Office of Graduate Medical Education was established in 1986 to provide consultation on GME programs (internship, residency, and fellowship training for physicians) for Program Directors and the Office of the Assistant Secretary of Defense for Health Affairs (OASD/HA). From 1986 to present, USU GME, under the leadership of the Associate Dean for Graduate Medical Education, has provided DoD-wide consultation and oversight for numerous USU School of Medicine (SOM) sponsored or co-sponsored GME programs.

MISSION

USU Office of GME Serves as a Significant Academic Component for Graduate Medical Education in the Military Health System. The University is directed to educate and train competent medical personnel qualified to serve the needs of the Military Health System through the provision of quality education programs in the health sciences. The Graduate Medical Education Programs of the MHS are of critical importance to both the University and to the entire network of Military Treatment Facilities. In light of this, the USU SOM Office of Graduate Medical Education serves as a significant academic component in the development of the medical expertise of the MHS residents in their assignments throughout the military GME programs. The following responsibilities are currently assigned to the USU GME program: 1) oversight for the National Capital Consortium; the Associate Dean for Graduate Medical Education serves as the NCC Administrative Director; 2) collection and evaluation of data for the DoD GME programs to ensure academic and scientific excellence; 3) oversight for the integration of the DoD GME programs to ensure that accreditation is not jeopardized; and, 4) consultation and advice for the Dean, School of Medicine, the President, USU, and others on military-unique medical curricula.

USU GME Office Assists in the Coordination of Simulated Training for the National Capital Consortium.

Simulated Operating Rooms for Specific Specialties Are Available on the Main USU Campus. The advanced training provided by the USU patient simulator is described in Section 11 of this report. When the anesthesiology residents come from the National Capital Area Anesthesiology Program and the Portsmouth Naval Medical Center, the training is intense. The scenarios are designed to present specific patients who provide complex clinical problems. Residents are purposely pushed beyond their competency levels, until they begin to make mistakes; those lessons will be remembered. Thus, critical lessons are learned without putting human patients or the residents at risk.

The USU simulation laboratory is fully equipped with all of the functional equipment of an operating room, including the standard monitoring equipment, the life support system (anesthesia machine and ventilator), a defibrillator, and instruments used in treatment. The laboratory also includes complete audio/video recording and playback equipment. Training sessions are recorded, and the residents review their performance with the instructors. The simulated patient provides a unique opportunity to experience relatively rare cases, military relevant, and combat trauma scenarios. The residents gain experience in recognizing problems, developing decision-making skills, familiarizing themselves with instruments and equipment, and refining techniques and procedures. Residents are able to repeat the scenarios until they are performed correctly.

New Satellite Facility Offers Simulation Training. Following collaborative efforts that began in 1995, the University and the Surgeons General instituted a new teaching facility, the National Capital Area Simulation Center, for all GME and NCC training programs (the Center is described at length in Section I of this report). The Simulation Center, a satellite facility located in Silver Spring, Maryland, began initial operations in the Fall of 1999. The administrative requirements and management of the Center are

assigned to the USU Office of Clinical Affairs. This unique Center is available for training purposes for all GME-sponsored programs.

NATIONAL CAPITAL CONSORTIUM

Mission of the National Capital Consortium. The mission of the National Capital Consortium is to educate physicians, dentists, and other health care professionals to provide care for the soldiers, sailors, airmen, and Marines throughout the Military Health System, to include their families. The NCC provides a scholarly environment that is dedicated to excellence in both education and health care and to the provision of ethical values and standards to all trainees, such as would be expected of those who devote their lives to careers in public service.

Development of the National Capital Consortium. In 1993, the Assistant Secretary of Defense for Health Affairs directed the integration of duplicate GME programs in the National Capital Region (NCR). In accordance with that directive, the National Capital Consortium was established by the Commanding Officers of the Walter Reed Army Medical Center, the National Naval Medical Center, the Malcolm Grow Air Force Medical Center, and the Dean, USU School of Medicine on January 25, 1995.

Five programs were initially identified for integration: Obstetrics and Gynecology; Otolaryngology/Head and Neck Surgery; Pathology; Pediatrics; and, Psychiatry. The process of the selection of program directors for the integrated residencies and arrangements for site surveys by the Accreditation Council for Graduate Medical Education (ACGME) began immediately; and, by the end of 1995, four programs had been site surveyed and one program, Pathology, had been approved without a site survey.

During 1996, the pace of integration progressed toward the integration of all duplicative programs with the possible exception of several specialties which had identified specific impediments to integration. Non-duplicative Fellowship Programs joined the Consortium as their parent programs were integrated. On June 20, 1997, the first joint graduation exercise for the National Capital Region was held at the Walter Reed Army Medical Center with more than 350 graduates participating. By July of 1997, there were 15 programs under consortium sponsorship as well as seven integrated programs under the sponsorship of one of the TriServices. An institutional site survey of the National Capital Consortium by the Accreditation Council for Graduate Medical Education was completed in July of 1997, and resulted in a favorable decision. There were 24 programs under the Consortium sponsorship at the end of 1997. By July 1, 1998, all of the USU GME programs were under the Consortium. As of December 31, 1999, 51 integrated medical training programs are under the sponsorship of the Consortium. The Consortium hopes to have all of the 63 GME programs, found throughout the four Member institutions, under its sponsorship by the Year 2001.

Significant accomplishments have been achieved throughout the GME programs. During 1998 through 1999, trainees, graduates, and residents published over 175 abstracts and 115 articles related to their respective NCC core and sub-specialty programs.

USU GME Ensures Coordination/Administrative Support for the National Capital Consortium. In September of 1997, the USU Office of Graduate Medical Education was selected as the Administrative Office for the National Capital Consortium; this delegation of responsibility was placed under the leadership of the USU Associate Dean for Graduate Medical Education (information about the NCC programs, governance, by-laws, and the NCC Administrative Handbook can be accessed via the NCC web site: <http://www.usuhs/mil/gme/NCC.htm>).

POLICY FOR MILITARY UNIQUE TRAINING IN DOD-SPONSORED GRADUATE MEDICAL EDUCATION PROGRAMS

"The USUHS shall coordinate efforts of the Services in developing the necessary curricula (for military unique training in DoD-sponsored Graduate Medical Education Programs) and shall establish a centralized repository of information on educational materials and courses to support the implementation of the curricula."

Policy Memorandum, Office of the Assistant Secretary of Defense, Health Affairs, dated June 28, 1999, page one.

New Policy Is Issued by the Assistant Secretary of Defense for Health Affairs on June 28, 1999. In a memorandum dated June 28, 1999, the Assistant Secretary of Defense for Health Affairs (ASD/HA) stated that the Graduate Medical Education (GME) Programs conducted for military trainees in DoD facilities offer an opportunity to include military unique aspects that will prepare physicians for the rigorous demands of practice in a wartime or contingency environment. The memorandum pointed out that it is essential for the military medical services to avail themselves of this opportunity in a comprehensive yet efficient manner; and, that new policies relative to DoD-sponsored GME programs are being established.

Each Program Must Include a Military Unique Curriculum that Is Standardized and Specialty Specific. The policy memorandum specified that at the entry level, each GME program shall incorporate a standardized curriculum that includes a core of those topics essential to every physician who will practice medicine in the military. This curriculum should be augmented by an orientation to field medicine such as the Combat Casualty Care Course (C4) or equivalent experience. The curriculum should be designed to complement, not replace, military training obtained through other means and only those elements that are both necessary and appropriate to the GME education program should be included. Beyond the entry year, each program should also include a military unique curriculum that is standardized and specialty specific. For subspecialty training, the curriculum may be directed toward the projected utilization of the trainee, usually in his/her core specialty. An appropriate exposure to the practice of the specialty in an austere or contingent environment should be an essential element of each program.

USU School of Medicine Office of Graduate Medical Education Will Coordinate the Development of Curricula. The USU School of Medicine Office of Graduate Medical Education has been tasked by the Assistant Secretary of Defense for Health Affairs to coordinate the efforts of the Services in developing the necessary curricula and to establish a centralized repository of information on educational materials and courses to support the implementation of a military unique curriculum that is standardized and specialty specific.

The policy memorandum also directs that military unique training in GME programs must be

documented on an annual basis and reported to the ASD(HA) by the Services by September 30 of the completed training year. Each program review must confirm that a military unique curriculum is in place and that it is being utilized; it should also confirm that appropriate opportunities to experience specialty practice in constrained environments exist and are being utilized.

National Capital Consortium
Academic Achievements and Publications
Addendum to Program Director's Annual Report

NCC/ GME Academic Achievements (1998-99). Below reflects outstanding academic accomplishments reported to the NCC Administrative Office C during the 1998-99 academic year. The academic leadership of NCC program trainees is not restricted to those listed below; in addition to these trainees and graduates, residents published over 175 abstracts and 115 articles for respective NCC core and subspecialty programs.

- | | |
|--|---|
| 1. MAJ Catherine Dinauer, MC, USA:
Pediatrics | Bailey K. Ashford Award (research) |
| 2. MAJ Jamie Grimes, MC, USA:
Neurology | CAPT John Hallenbeck Award |
| 3. CPT Bonnie Hartstein, MC, USA:
Pediatrics | Leo Geppart Award for Primary Care Research |
| 4. LCDR Wendy Lee, MC, USN:
Dermatology | Grant recipient from the Women's Dermatological Society |
| 5. LCDR Joseph McBreen, MC, USN:
Pediatrics | Resident Teaching Award |
| 6. LtCol Evelyn Mendez, USAF, MC:
Pediatric Gastroenterology | Semi-finalist-Ogden C. Bruton Award for Basic Research in Pediatrics, Uniformed Services Pediatric Seminar |
| 7. MAJ Leon Moores, MC, USA:
Neurosurgery | Juan C. D. Avis Award |
| 8. MAJ M. Nelson, MC, USA:
Diagnostic Laboratory and Immunology | Graves B. Erskine Award (fellow)
University of Virginia Minority Medical Education Award
Best Resident Teaching Award - NNMIC |
| 9. LT Michael Phipps, MC, USNR:
Orthopaedics | Air Force Clinical Investigations Division (fellows) |
| 10. Capt Michael Rajnik, USAF, MC:
Pediatric Infectious Disease | Walter Reed Army Medical Center Research Award |
| 11. CPT Wanda Salzer, USAF, MC:
Pediatrics Hematology/Oncology | Graves B. Erskine Award (resident) |
| 12. CPT Dana J. Vick, MC, USA:
Pathology | Endocrine Society Award for Fellows |
| 13. MAJ S. Wingo, MC, USA:
Endocrinology | Armed Forces ID Society Research Grant; Air Force Clinical Investigations Division (fellows) |
| 14. Maj Jon Woods, USAF, MC:
Pediatrics Infectious Disease | |

VI. THE OFFICE OF CONTINUING EDUCATION FOR HEALTH PROFESSIONALS

MISSION

USU is Mandated by Congress to Provide Continuing Education for Health Professionals. Under Title 10, U.S. Code (Section 2113), USU is mandated by Congress to "establish programs in continuing medical education for military members of the health professions to the end that high standards of health care may be maintained within the military medical services." The USU Office of Continuing Education for Health Professionals (CHE) plays a significant role in facilitating the continued professional growth of health care professionals in the federal services. In addition, the USU Office of CHE establishes programs for non-federal civilian health professionals in disciplines where the body of knowledge is available primarily within the medical domain of the federal services and when that knowledge will contribute to the health of the Nation, other countries, or the global community. It is the intent and responsibility of the Office of CHE to create and maintain a climate conducive to the self-development of all customers and staff; and, to plan, implement, and evaluate continuing education programs based on the principles of adult education.

Six Factors Mandate CHE's Essential Role in Today's Military Health System. Continuing education (CE) has always been recognized as an essential component of the continuum of education for health professionals. The critical role of CE in the educational spectrum has come to the fore during more recent years as a result of several educational, social, and political factors:

Rapid advances in biomedical knowledge and its application to the practice of health care;

Changing expectations of health care professionals as effective communicators and team members;

Enhanced awareness of the role of health care providers in disease prevention;

Incorporation of evidence-based medicine, accountability and financial incentives into daily medical practice;

Changes in the work environment of health care providers with the move of medical practice to the ambulatory setting; and,

The use of CE as evidence of maintenance of competence for medical practice in relicensure, hospital privileging, specialty recertification, professional society membership and selected other requirements.

CHE Must Ensure Academic Involvement in all Phases of Programs Designated for Credit. The Office of Continuing Education for Health Professionals is under the leadership of the Senior Executive Director, who reports directly to the USU President, and is responsible for academic involvement in all phases of programs designated for credit to include:

Identification of educational needs, planning, implementation, and evaluation of continuing education activities for members of the health professions serving in the uniformed and other federal services (a number of methods are used by the Office of CHE in determining the topics for continuing education activities. These range from formal surveys and structured interviews to current topics in the professional literature. In every case, the particular interest and needs of a specific audience are considered in planning and preparation)

Acquisition and maintenance of continuing education accreditations at USU;

Administrative and logistical support and determination of budgetary requirements for continuing education programs sponsored by the University;

Maintenance of professional and educational liaisons with military and civilian professional organizations and academic institutions; and,

Monitoring the quality of continuing education activities and utilizing evaluative data and research findings to improve the quality of these activities at the University (annual total program evaluations identify areas where improvement can enhance the continuing education services provided by the University. A consistent focus on developing employee potential through cross training within the office and additional training within the University and from outside sources also improves the provision of services. Attendance at professional conferences and meetings conducted by the accrediting agencies or peer groups ensures compliance by the University with all continuing education requirements of the Accreditation Council for Continuing Medical Education, the American Nurses Credentialing Center's Commission on Accreditation, the American Psychological Association, and the American College of Healthcare Executives. Continuous quality improvement is active in all phases of the Office of CHE. Mechanisms such as the evaluation of events by participants, by faculty, and by office staff help to improve the quality of similar future events).

NATIONALLY RECOGNIZED CONTINUING EDUCATION CREDIT

Unique Accreditation Within the Military Health System. The USU Office of Continuing Education for Health Professionals provides nationally recognized continuing education credit for physicians, nurses, psychologists, healthcare executives, and social workers through its accreditation by: 1) the Accreditation Council for Continuing Medical Education (current accreditation continues through July 2001); 2) the American Nurses Credentialing Center's Commission on Accreditation as a Provider of Continuing Education in Nursing (accreditation continues through August 2001); 3) the American Psychological Association (accredited through March 2004); and, 4) the American College of Healthcare Executives (ACHE) authorized USU, on May 24, 1996, to award pre-approved Category II (non-ACHE) continuing education credit. This inclusive provision of continuing education from one office is believed to be unique within the Military Health System (MHS).

The Office of CHE, under the academic umbrella of the University, is uniquely positioned to perform a significant role in facilitating the continued professional growth of health care professionals in the MHS. The principal responsibilities of the office are the identification of education needs, planning, implementation, and the evaluation of continuing educational and resuscitative medicine programs for members of the health professions. CHE is also responsible for the acquisition and maintenance of the University's continuing education accreditations and for the trauma and resuscitative medicine training program affiliations. On July 2, 1999, **Captain W. Thomas Nunns, NC, USN**, relieved **Captain Laura Omer, NC, USN**, as the CHE Senior Executive Director.

The Continuing Health Education Committee. The Continuing Health Education (CHE) Committee serves as a reviewing body and as an advisory committee to the USU President and to the Office of CHE. The CHE Committee members are appointed by the USU President. Other faculty members are invited to participate in the activities of the committee on an ad hoc basis. This Committee meets at least four times each year. The membership consists primarily of department chairs or their designated representatives; their membership facilitates communication and provides a forum for planning education activities and for the discussion of issues and policies that affect continuing medical education.

INCREASED SUPPORT FOR THE MILITARY HEALTH SYSTEM

CHE Support for Graduate Medical Education Programs. In conjunction with the National Capital Consortium, the Office of CHE's involvement has greatly increased through sponsoring on-going continuing medical education (CME) programs such as Grand Rounds in Faculty Development, Family Medicine, Preventive Medicine, Ophthalmology, Pediatrics, and Psychiatry.

CHE Support for TRICARE/Health Affairs Initiatives. During Fiscal Year 1999, the USU Office of CHE supported the Office of the Secretary of Defense (OSD), Health Affairs (HA) with the TRICARE Winter Conference, the Uniform Business Office, the Health Information and Management Systems Society Conference, four Medical Executive Training Courses, the video teleconference lecture series on Current Tools and Issues in Managed Care, and 12 courses on the Medical Effects of Ionizing Radiation (MEIR). The MEIR course became available on videotape at the beginning of Fiscal Year 1999, and by September of 1999, it was also available in a CD-ROM version; this enabled the MEIR course to be cost-effectively offered as distance/distributive learning.

Specialty and Review Courses for the Military Health System. The Office of CHE sponsored continuing education for numerous specialty and review courses for the Military Health System during 1999.

Medical Readiness - The Military Medical Humanitarian Assistance Course. The Military Medical Humanitarian Assistance Course is a two-day interactive course designed to train U.S. military health care providers to deliver optimal medical care to civilian populations, primarily women and children, in the aftermath of humanitarian emergencies. Prior to this course, a void existed in preparing medical officers with the necessary skills, knowledge, and confidence to actively participate in such missions. Given the U.S. military's increasing involvement in Military Operations Other Than War (MOOTW), the focus of this course is centered on familiarizing clinicians with the unique aspects of humanitarian missions, so that they are best prepared to actively participate and lead future missions. Though the health issues are often predictable, the paradigm presents issues that rapidly progress to the severest degree. Resources are typically more limited than in other operations, complicating any attempt for immediate intervention. The course emphasizes practical skills and techniques, not often addressed in the curriculum of American medical education that will be useful to the provider who is challenged to provide the best possible medical care in an austere environment. The faculty who present this course are committed to the quality and credibility of this educational experience. Thus, all clinical instructors have not only mastered the clinical material, but also have had personal experience practicing medicine in an austere health environment. All of the clinical cases are derived from real experiences in operational medicine. This course was developed at USU under the sponsorship of the Dean, School of Medicine, and the Department of Pediatrics. The course was held a total of five times for 95 physicians during 1999 and was well received by all attendees. Four courses are scheduled through March, 2000.

AMA Seminar on the Medical Response to Biological and Chemical Terrorism. The AMA Seminar: "Medicine's Role in Responding to Biological and Chemical Terrorism, Is Your Community Ready?" was offered for physicians as a pre-conference activity to the American Medical Association (AMA) Annual Meeting in Chicago on June 19, 1999. It was supported by the AMA Section Council on Federal and Military Medicine, the National Medical Veterans Society, and the AMA Council on Scientific Affairs. The program was designed to educate physicians on the health effects of terrorism and to provide information resources on how AMA leaders of organized medicine can help local communities to prepare for such disasters. Speakers, considered to be experts in their subject areas, presented an overview of recognition, diagnosis, and treatment for acts of biological and chemical terrorism at the community level. The psychological impact of terrorism and the need for the early involvement of federal assets were also addressed. One hundred physicians were awarded three hours of Category 1 CME credit. Results of the seminar will be reported to the House of Delegates at the Annual 2000 Meeting.

Other Courses/Activities Suonsored by CHE During 1999:

The African Tropical Medicine Conference;

The International Spine Workshops (Cervical, Peripheral Nerve, etc.);

The Capital Conference Family Practice Review;

The Army Force Health Protection Conference;

Surgical Topics (Advanced Gynecological Laparoscopy, Basic and Advanced Laparoscopic Surgery, Basic Microvascular Surgery, Minimally Invasive Selective Lymphadenectomy and Sentinel Node Biopsy, Video-Assisted Thoracic Surgery, the 26th Annual Military Vascular Surgery Symposium, and Ultrasound for the General Surgeon;

Three TriService Video Endoscopy for Nurses Courses were held at the USU campus; San Diego, California; and, San Antonio, Texas;

One Obstetric Ultrasound Course was held at the National Naval Medical Center;

The Seminar on Breast Cancer Prevention was held at the Office of the Attending Physician at the Capitol;

The Thirteenth Conference on Military Medicine was part of a consensus building process on "Unexplained Symptoms after War and Terrorism: Building Towards Consensus." This conference, is discussed in detail in Section I of this report; it was held on May 24 - 26, 1999, on the USU campus;

The USU Department of Pediatrics held a two-day conference on "Inflammatory Bowel Disease in Children" and a Pediatric Cardiology Meeting;

CHE sponsored the U.S. Air Force Reserve Flight Surgeon's Sustainment Course, directed by the USU Department of Family Medicine; and,

A Primary Care Continuing Education Conference was conducted in the Western Pacific at the U.S. Air Force Hospital Yokota. One hundred and fourteen health care workers received continuing education credit during the conference at substantiated cost avoidance to the sponsoring command.

Association of Military Surgeons of the United States (AMSUS) Annual Meeting. Since the 99th Annual Meeting in 1992, CHE has worked with AMSUS to provide continuing education credit for their Annual Meetings. AMSUS was established in 1891, and incorporated by an Act of Congress in 1903, as the Society of the Federal Health Agencies. As such, it contributes to the improvement of all phases of the federal health services. The constituent services of AMSUS include the medical departments of the U.S. Army, U.S. Navy, U.S. Air Force, U.S. Public Health Service, and the Department of Veterans Affairs. The U.S. Public Health Service hosted the 105th Annual Meeting, Healthy Forces, Healthy Communities, Healthy People: Fitness for Global Readiness, held on November 8 - 13, 1998, in San Antonio, Texas. The agenda emphasized federal medicine and took full advantage of the unique forum offered by the meeting and attendees. For Fiscal Year 1999, the USU Office of CHE offered 195 sessions for continuing education credit in five disciplines (an increase from the 47 sessions offered in two disciplines during Fiscal Year 1993).

GENERATED COST AVOIDANCE FOR DOD BY CHE

CHE Generates Cost Avoidance for DoD. In carrying out its principal responsibilities during Fiscal Year 1999, CHE sponsored continuing medical education for 268 programs with an attendance of 4,068 physicians; provided continuing nursing education for 35 activities with an attendance of 2,148 nurses; and, approved Category 11 (non-ACHE) continuing education credit for 10 programs for 519 members of the American College of Healthcare Executives. CHE also sponsored eight programs for ten psychologists and two programs for 14 social workers. Because the USU Office of CHE brings medical training to the medical health care professionals, **an estimated cost avoidance of \$2,210,072 was generated for the DoD** by eliminating extensive travel expenses and time away from the hospitals and clinics (the total cost avoidance was calculated by subtracting all of the operating costs for the USU Office of CHE, to include civilian and military manpower, from the total of savings generated by the elimination of travel, per diem and significant commercial registration expenses (\$2,874,012 - \$663,940 = \$2,210,072).

SUPPORT FOR OTHER FEDERAL ORGANIZATIONS

Department of State Programs. In 1999, USU provided two iterations of a continuing education program for the Medical Office of the Department of State. Along with two days of trauma and disaster updates, tracks on Medical Informatics and Advanced Trauma Life Support were available. Thirty-eight physicians, 38 nurse practitioners, and five physician assistants were able to earn up to 29.5 hours of CME or 34.7 nursing contact hours. In 2000, USU will again provide two iterations of a continuing education program for the Medical Office of the Department of State. Topics will include two days of medical updates, one day of infectious disease issues, three half days each of surgical topics, food handling, and mental health. An additional half day will be allotted for personal/administrative matters.

NASA Teleconference Continuing Education Series. Further examples of service to other federal agencies were two teleconference continuing education series conducted by NASA using experts from the USU Department of Preventive Medicine and Biometrics. The objective of the two series was to discuss health care systems operating in the seven countries which will provide members for the team manning the space station. The first Fiscal Year 1999 series was an overview of Bioethics in the Selected Countries; and, the second was Health Surveillance and Maintenance in the Workplace. Two additional series will be held during Fiscal Year 2000.

Collaboration with the Food and Drug Administration. The USU Office of CHE collaborated with the Food and Drug Administration to provide continuing education credit for U.S. physicians and nurses through the publication, MEDWATCH, related to their responsibilities to report medical device

adverse events. Total participants through May 31, 1999, included 668 physicians, 350 nurses, and 610 others. Future endeavors will include the publication of enduring material on the World Wide Web.

The Future. In order to expand the University's ability to serve as a resource for other federal agencies, the Office of Continuing Education for Health Professionals is seeking partnerships with Service doctrine centers, the National Institutes of Health, the National Aeronautical and Space Administration, the Public Health Service, the National Institute for Drug Abuse, the Federal Emergency Management Agency, the Department of State, and similar entities. One such example follows:

Women's Memorial Health Seminars. Brigadier General Wilma L. Vaught, USAF (Ret.), President of the Women In Military Service for America Memorial Foundation, Inc., envisioned a series of seminars or programs for a National Forum on Women's Health Issues in the Military to be offered at the Women's Memorial Education Center beginning in the Spring of 2000. The Assistant Secretary of Defense for Health Affairs and the USU President tasked the Graduate School of Nursing to coordinate the undertaking. The seminars will serve as an opportunity for the co-sponsoring organizations to educate women, particularly active duty women and women veterans, about their health, maladies common to women, current findings and treatments, and preventive care.

MILITARY TRAINING NETWORK

Mission. The mission of the Military Training Network (MTN) is to 1) provide an efficient administrative framework that assures course accessibility; 2) develop and implement policy guidance; and, 3) ensure compliance with curriculum and administrative standards for resuscitative and trauma medicine training programs for the Uniformed Services and Department of Defense affiliates. The USU TriService MTN staff provides specific service expertise, central record keeping, world-wide coordination of programs and ensures that national resuscitative and trauma medicine organizations are aware of the unique requirements of military medicine.

World-Wide Capabilities Essential to Medical Readiness. The USU MTN is designed as the DoD affiliate for the American Heart Association and the American College of Surgeons for resuscitative and trauma medicine training programs. The resuscitative and trauma medical programs administered by the MTN include: Advanced Cardiac Life Support (ACLS); Advanced Trauma Life Support (ATLS); Pediatric Advanced Life Support (PALS); Army Emergency Medical Technician (EMT); and, Basic Life support (BLS).

Currently, the USU MTN is the only American Heart Association Affiliate with worldwide reciprocity for health care providers. The USU MTN provision of this training enhances DoD's ability to provide training in strategically critical areas throughout the world (e.g., Bosnia, Korea, and Turkey), on operational platforms (e.g., aboard aircraft carriers), and remote sites where civilian training would not be available. All of these capabilities are essential to the wartime medical readiness of the Uniformed Services.

MTN Generates Estimated Savings for DoD. Department of Defense sites affiliated with the MTN are approved to conduct self-sustained resuscitative and trauma medicine training. This continues to prove cost-effective to the Military Health System because it eliminates the need to pay premium training costs for civilian resuscitative and trauma medicine programs. For example, during Fiscal Year 1999, 209,419 defense personnel were trained through the USU MTN. The average commercial cost for providing that training would have conservatively totalled at least \$1 1,316,000. The 1999 cost avoidance generated for the DoD, an estimated total of **\$10,683,165**, was calculated by subtracting all of the operating costs, to include civilian and military manpower, provided by the three Services from the average commercial cost (\$1 1,316,000 - \$632,835 = \$10,683,165).

VII. THE ARMED FORCES RADIOBIOLOGY RESEARCH INSTITUTE

ESTABLISHMENT

Background. The Armed Forces Radiobiology Research Institute (AFRRI) is the principal Department of Defense (DoD) laboratory for investigations of the biological effects of ionizing radiation. The TriService Laboratory, located on the campus of the National Naval Medical Center (NNMC) in Bethesda, Maryland, was chartered in 1961. In October of 1993, the management of AFRRI was transferred from the Defense Nuclear Agency (now the Special Weapons Directorate in the Defense Threat Reduction Agency) to USU. AFRRI employs about 170 military and civilian scientists, physicians, technicians, and support personnel. The Institute supports the research requirements of DoD components and collaborates with other government facilities, academic institutions, and civilian laboratories in the United States and other countries.

Unique Radiobiology Research. The AFRRI complex was designed and built to conduct radiobiology research in support of the military medical mission. The first radiation source installed in the facility was a TRIGA research nuclear reactor. The design for this reactor was conceived by **Dr. Edward Teller** as one that would be safe if built and managed by university nuclear engineering departments for nuclear materials research and training purposes. **It was quickly recognized that AFRRI's ability to safely operate the TRIGA made it an ideal source to simulate the prompt radiation pulse from a nuclear weapon.**

More recently the reactor demonstrated its utility as a source of fission spectrum neutrons to conduct radiobiology experiments at very low-dose levels for protracted periods of time. Although there are 49 of these small research reactors in the world and 18 in the United States, **only the AFRRI reactor is designed for and is wholly dedicated to radiobiology research.**

AFRRI's second major source is a cobalt-60 irradiation facility. Designed to safely hold up to 400,000 curies of cobalt-60, **the facility is the largest source of gamma rays on the East Coast.** Because this source can produce a high exposure rate consisting of monoenergetic gamma-ray fields, it is ideally suited as a reference source of high-energy photons for military radiobiology research.

OUTREACH

Sharing of Research Findings. AFRRI disseminates its findings within DoD and the international scientific community through articles in peer-reviewed journals, presentations at professional conferences, and reports and recommendations to the TriServices concerning the mitigation of radiation hazards and optimized medical treatment of casualties. Research is shared with specific audiences through

symposia, consensus conferences, publications, and an accredited course on the medical effects of ionizing radiation.

The Medical Effects of Ionizing Radiation Course. The Medical Effects of Ionizing Radiation Course trains physicians, nurses, and technical support personnel on treatment strategies for radiation injuries. Two-day versions of the course are offered worldwide at military medical centers throughout the year. An intense four-day course is also offered once a year in the Washington, D.C., area.

Medical Radiobiology Advisory Team. AFRRI also maintains the Medical Radiobiology Advisory Team, which provides medical and health physics consultation and dose assessment for any military or non-military nuclear or radiological accident, incident, or injury. This team has been used to provide support in actual radiological emergencies that have occurred around the world. With additional AFRRI health physicists, **the team also deploys with the Defense Nuclear Advisory Team in response to worldwide exercises involving nuclear weapons and nuclear reactor accidents, and exercises involving radiological dispersal devices.**

Research Thrusts. There are four major AFRRI research thrusts that are carried out by the following teams:

The Radiation Casualty Management Team. This team investigates the full spectrum of medical countermeasures for an external exposure to ionizing radiation. Most recently, this team developed sophisticated strategies based on the therapeutic stimulation of growth and repair of irradiated blood cell populations. This effort significantly increased survivable levels and formed the basis for a consensus in the treatment of radiation injury for persons exposed to life-threatening levels of radiation. The team is also testing pharmaceutical strategies to lower the long-term health risks of radiation exposure. Recent experiments performed at AFRRI, as well as other laboratories, have used animal models and cellular systems to demonstrate the ability of certain drugs to block the induction of radiation-induced mutations and related neoplastic processes. The team is evaluating non-invasive drug delivery systems that will permit the continuous infusion of radioprotective agents to block the effects of radiation exposure for prolonged periods of time, without causing unacceptable side effects.

During the past year, AFRRI investigators have demonstrated significant radioprotective qualities of a non-androgenic steroid, 5-androstenediol (5-AED). The drug has no measurable toxicity at the doses being used to achieve protection. Ongoing research includes attempts to deliver similar protective efficacy by the oral route of administration (currently, subcutaneous injection is utilized). Doing so would lead to a product that can be more easily managed logistically and used by deployed military forces.

The Biodosimetry Team. This team is developing biodosimetric assays to assess ionizing radiation exposure levels. Work is progressing to establish at AFRRI the capability to conduct definitive diagnostic

biodosimetric assays based on an automated analysis of the number and distribution of chromosome aberrations in lymphocytes. In addition, cytogenetic and molecular biomarkers are being evaluated for use in developing rapid field-deployable biodosimetric assays to support commanders' decisions regarding tactical operations and medical treatment. The screening assay capability in the field will be supported by the definitive assay capability at AFRRI.

The team recently completed important preliminary work on an approach that quantifies chromosome damage as a means to estimate the radiation dose an individual may have received. Classical methods involve a complicated and labor intensive procedure to induce peripheral blood lymphocytes into cell division (mitosis) and produce the characteristic mitotic chromosomes needed for analysis. Special chromosomal stains are then used to visualize the fragmentary damage that radiation can cause. The new procedure developed by AFRRI investigators chemically induces the nuclear DNA of resting or interphase cells to condense into chromosome-like structures that can then be stained and analyzed. Whereas only a small fraction of peripheral blood lymphocytes can be induced into mitosis by classical methods, the nuclear DNA of over 50 percent of cells can be induced prematurely into chromosome-like condensations using the new chemical method. Far fewer cells thus need to be analyzed before a sufficient number of damaged nuclei are counted to give statistically meaningful results. **Using the premature chromosome condensation or PCC assay, a technician can complete the analysis of a sample in one day as opposed to the three days required by classical methods.** The PCC assay is also adaptable to automated procedures so that large numbers of patient samples can be processed in a short period of time by trained clinical laboratory staff. This attribute makes the test more accessible to non-specialized medical treatment facilities and therefore more widely available for managing mass casualty situations.

The Depleted Uranium Team. This team was formed soon after it was determined that depleted uranium (DU) munitions used during the Gulf War had wounded approximately 16 American soldiers as a result of friendly-fire accidents. Although this is a small number of casualties, the demonstrated tactical superiority of this new class of munitions means that future adversaries could deploy them against our forces on a large scale. As with conventional shrapnel injuries, it is often impossible to surgically remove all of the metal fragments from affected tissues; personnel wounded with DU are likely to carry the metal for the rest of their lives. Although DU has a low specific radioactivity, the relatively small amount of radiation emitted from the fragments may contribute to, and perhaps enhance, the toxicity associated with the chemical properties of uranium. Little is known about the immediate and long-term health effects of uranium fragments imbedded in tissues. Although agents are available to help remove uranium from the body, these agents are highly toxic and cannot be tolerated when administered over long periods. A better understanding of the medical consequences of these types of injuries and new, long-term treatment strategies are being sought by this team.

Over the past two years, the team has established and employed a sophisticated analytical procedure using inductively coupled plasma mass spectrometry (ICP-MS) to measure the urinary output of DU in individuals who may have internal contamination, either from shrapnel wounds, ingestion or inhalation. Not only is the procedure highly sensitive, being able to detect the normal background contamination of uranium, but it also recognizes the different atomic isotopes of uranium. The name DU comes from the fact that the highly radioactive isotope of uranium ore is removed and used for making nuclear fuel rods and weapons grade material. The remaining uranium is depleted of this isotope and thus receives its name. Being able to differentiate the isotopes in a urine sample allows medical practitioners to determine the possible source of uranium contaminating an individual. The ratios of the different isotopes can quickly lead to a determination if the uranium in a urine sample is from DU or some other

uranium source. Because natural uranium is ubiquitous in the environment, it can be important to determine if someone's internalized uranium is from natural sources or from DU. The AFRRI Depleted Uranium Team is working closely with the Department of Veterans Affairs to medically follow U.S. veterans wounded by DU shrapnel in the Gulf War to include those expected of having been exposed to DU in some other way. The ICP-MS urinalysis procedure carried out by AFRRI scientists has become an integral part of this collaborative study.

The Nuclear, Biological, and Chemical Interactions and Countermeasures Team. Because doses of radiation that are well below the lethal range for humans can significantly compromise the body's host defense systems, the Nuclear, Biological, and Chemical Interactions Team was established to examine those interactions when sublethal doses of radiation are combined with sublethal doses of biological and/or chemical warfare agents. Another objective of this team is to determine interactions between sublethal doses of radiation and the theater-specific immunizations or chemical agent prophylactics given to military personnel before or after deployment. There may be special health problems if their altered immune systems are challenged with sublethal doses of radiation soon after they have been given otherwise appropriate prophylactic agents. A third objective is to determine the radiation sensitivity of biological and chemical agents which current forces may encounter. These data will form the technical basis for a strategy to neutralize such agents wherever they are found.

The team recently made an important finding involving the combined insults of radiation and "Bacillus anthracis," the bacterial agent that causes anthrax. Besides simply quantifying the lethal consequences of combined exposures, the team also attempts to describe any unique or unpredicted pathologic conditions that lead to mortality. In continuing experimental studies, the team's investigators found that combined exposure to radiation and "Bacillus anthracis" induces the translocation of gut microflora into the blood stream. Although normal inhabitants of the intestinal tract, these bacteria can cause serious life-threatening systemic infections once they reach the blood stream. The AFRRI investigators found that the dramatic rise in mortality when subjects are challenged with sub-lethal doses of both radiation and "Bacillus anthracis" is at least partially attributable to the translocation of gut microflora. Neither radiation nor "Bacillus anthracis" alone causes this phenomenon, but when combined in the same subject, several species of intestinal bacteria can be isolated from the blood and other major organ systems. This new knowledge provides critical information needed if combined exposures are to be successfully treated, especially under the uniquely challenging conditions of combat operations.

Four Projects Reflect Defense Technology Objective Status. In Fiscal Year 1998, AFRRI captured a fourth Defense Technology Objective (DTO) covering a portion of its program related to nuclear, biological, and chemical combined effects. (A "DTO" is a specifically recognized high priority element of technology advancement that will be developed or demonstrated and has an anticipated delivery date.) In Fiscal Year 1997, for the first time,, significant parts of the AFRRI radiation casualty management, biological dosimetry, and depleted uranium health effects efforts captured three of the 21 DTOs under the biomedical focus area of the Defense Technology Area Plan (DTAP). The DTAP is one component of the Defense Science and Technology Strategy; it presents the DoD objectives for the investment strategies in applied research and advanced technology development needed to advance technologies that are critical to DoD acquisition plans, service warfighter capabilities, and the Joint Warfighter Science and Technology Plan. The product of a DTO is expected not only to enhance military

operational capability but also to address other important issues such as affordability and dual-use application, both of which receive special emphasis in the Defense Science and Technology Strategy; DTO status identifies funding required by DoD to achieve a new capability...three AFRRRI project areas secured this budgetary recognition during Fiscal Year 1997, and a fourth in Fiscal Year 1998.

Future Missions. The world remains a dangerous place when it comes to nuclear and other radiological weapons. AFRRRI addresses those risks by developing biomedical strategies to prevent, assess, and treat radiation injuries. Although the end of the Cold War and the ensuing collapse of the Warsaw Pact greatly diminished the threat of a large-scale exchange of nuclear weapons, the development and stockpiling of these weapons continues. Examples are the discovery of a sophisticated nuclear weapons program in Iraq by the International Atomic Energy Agency after the Gulf War and recent nuclear tests by India and Pakistan. Continuing uncertainties concerning the status and security of the nuclear stockpile and the growing ambitions and sophistication of terrorist organizations underscore the need for national and international strategies to deal with these threats. Other issues have emerged in recent years that involve radiation and demand biomedical solutions. They include the possible use of radioactivity to contaminate facilities or terrain with the aim of denying or impeding access to operational forces; the medical questions regarding soldiers who were wounded with depleted uranium munitions in the Gulf War; the increasing threat of nuclear, radiological, or combined terrorism; and, the increasing role of the Department of Defense in humanitarian operations that could include missions in radiation environments. AFRRRI is uniquely equipped to address the biomedical research objectives that could result from these issues.

REALIGNMENT

Committee Determines Realignment. In October 1998, the Director of the Armed Forces Radiobiology Research Institute (AFRRRI) reported to the USU Board of Regents that the committee tasked to review the alignment of AFRRRI recommended that AFRRRI be realigned with the Defense Threat Reduction Agency. In a subsequent meeting hosted by the Deputy Undersecretary of Defense for Science and Technology on May 7, 1999, an alternative recommendation was made to realign AFRRRI into USU, with research investment strategy developed by AFRRRI and USU along with the Commander, U.S. Army Medical Research and Materiel Command, Fort Detrick, Maryland, and with program oversight according to Armed Services Biomedical Research Evaluation Management Committee (ASBREM) processes. As of this writing, a for-coordination draft memorandum to this effect is being staffed through all affected DoD offices and organizations.

For further information regarding this document contact the USUHS Office of the Vice President for Administration and Management. Phone: (301) 295-1956; E-Mail: mdix@usuhs.mil



OFFICE OF THE
PRESIDENT

UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES

4301 JONES BRIDGE ROAD
BETHESDA, MARYLAND 20814-4799



September 27, 1999

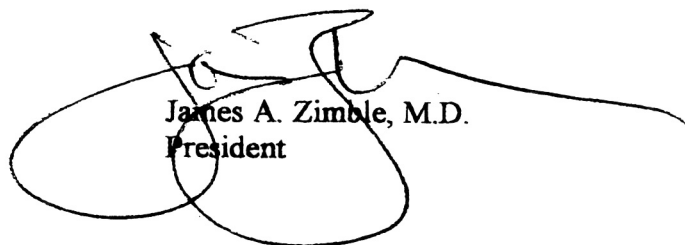
MEMORANDUM FOR DIRECTOR, ADMINISTRATION AND MANAGEMENT

SUBJECT: Revision of DoD Directive 5105.45, "Uniformed Services University of the Health Sciences (USUHS)"

On May 17, 1999, the Under Secretary signed the charter for USUHS. As in previous versions of the charter, the Dean of the School of Medicine is named in the Directive as having specific organizational duties and responsibilities. However, one significant omission remains ---the Dean, Graduate School of Nursing (GSN). This position is equivalent to the Dean, School of Medicine, and should be recognized as the head of an equivalent-level school. To remedy this oversight, I propose that the Directive be amended administratively to include the GSN. By this change, both schools will be recognized appropriately. Specifically, I recommend the addition of two paragraphs:

- 6.1.4. A Dean of the Graduate School of Nursing, who shall function as the chief academic officer of the Graduate School of Nursing and report to the President of the USUHS. [Note: Current paragraphs 6.1.4 and 6.1.5 will be renumbered appropriately.]
- 7.1.8. Ensure that the Dean of the Graduate School of Nursing shall develop and administer policies and procedures on the academic affairs of the Graduate School of Nursing.

Thank you for your assistance with this important revision. Mr. Bobby Anderson is the University contact for this action (301-295-3 116; banderson@usuhs.mil).


James A. Zimble, M.D.
President

Attachment: DoD Directive 5105.45, May 17, 1999

cc: LTG Ronald Blanck, Chair, USU Executive Committee



Department of Defense DIRECTIVE

NUMBER 5105.45
May 17, 1999

DA&M

SUBJECT: Uniformed Services University of the Health Sciences (USUHS)

- References:
- (a) DoD Directive 5105.45, subject as above, April 19, 1991 (hereby canceled)
 - (b) Chapter 104 et seq. of title 10, United States Code
 - (c) Secretary of Defense Report, "Defense Reform Initiative," November 1997¹
 - (d) Program Budget Decision 711R, "Defense Reform Initiative - Office of the Secretary of Defense and the Defense Agencies," December 17, 1997
 - (e) through (x), see enclosure, 1

1. REISSUANCE AND PURPOSE

This Directive reissues reference (a) to:

- 1.1. Update the mission, policy, organization and management, responsibilities and functions, relationships, and authorities of the USUHS.
- 1.2. Provide for USUHS governance under reference (b).
- 1.3. Establish the USUHS Executive Committee pursuant to the direction of reference (c).
- 1.4. Designate the Secretary of the Navy as the "DoD Executive Agent" for administrative support of the USUHS, in accordance with reference (d).

¹ Availability at <http://www.defenselink.mil/pubs/dodreform/>

2. APPLICABILITY

This Directive applies to the Office of the Secretary of Defense (OSD), the Military Departments, the Chairman of the Joint Chiefs of Staff the Combatant Commands, the Inspector General of the Department of Defense, the USUHS, the Defense Agencies, and the DoD Field Activities (hereafter referred to collectively as "the DoD Components").

3. DEFINITIONS

3.1. Academic Affairs. Faculty appointments, promotions and organization, awarding of degrees, curriculum design and implementation, academic requirements for admission and graduation, and related matters vital to the academic well-being of the USUHS.

3.2. Uniformed Services. The Army, Navy, Air Force, Marine Corps, Coast Guard, the Commissioned Corps of the U.S. Public Health Service, and the Commissioned Corps of the National Oceanic and Atmospheric Administration.

4. MISSION

The USUHS shall:

4.1. Educate and train competent medical personnel qualified to serve the needs of the Uniformed Services through providing the highest quality education programs in the health sciences.

4.2. Place high priority on educating and training personnel to meet the combat and peacetime medical needs of the Armed Forces.

4.3. Grant applicable advanced academic degrees; establish postdoctoral and postgraduate programs, and technological institutes; conduct medical readiness training and continuing education for members of the Uniformed Services in the health professions; and prepare individuals for careers in the health professions in the Uniformed Services.

5. POLICY

It is DoD policy that:

5.1. Consistent with the performance of the DoD mission and with established practices covering academic independence and integrity in the fields of medical and health sciences education, the Department of Defense recognizes the unique role of the USUHS Board of Regents in advising the Secretary of Defense. Consistent with applicable law and accomplishment of the DoD mission, the Assistant Secretary of Defense for Health Affairs (ASD(HA)), the USUHS Executive Committee, and the President of the USUHS shall be guided by the advice of the USUHS Board of Regents on academic affairs.

5.2. USUHS funding shall be within the Defense Health Program.

6. ORGANIZATION AND MANAGEMENT

6.1 The USUHS is a joint entity of the three Military Departments, subject to the overall supervision of the ASD(HA) and the management direction of the USUHS Executive Committee, and shall consist of the following:

6.1.1. A Board of Regents that shall be established and operated, in accordance with 5 U.S.C. Appendix (Federal Advisory Committee Act), and shall consist of members appointed under Section 2113(a), Chapter 104, of 10 U.S.C. (references (e) and (b)).

6.1.2. A President of the USUHS, who shall be the chief executive officer of the USUHS, and who also is the Dean of the USUHS, as described in reference (b), and who shall report to the ASD(HA) through the USUHS Executive Committee.

6.1.3. A Dean of the F. Edward Hebert School of Medicine, who shall function as the chief academic officer of the F. Edward Hebert School of Medicine and report to the President of the USUHS.

6.1.4. Other subordinate positions and elements as are established by the President of the USUHS, within authorized resources.

6.1.5. Students selected under procedures prescribed, in accordance with Chapter 104 of reference (b), and graduate students.

6.2. The USUHS Executive Committee is established to provide the supervision and management of the USUHS, pursuant to the Defense Reform Initiative (reference (c)), and consistent with the direction of the Secretary of Defense to reduce the operational and program management responsibilities of the OSD.

6.2.1. The USUHS Executive Committee shall consist of the Surgeons General of the three Military Departments and shall report to the ASD(HA) on USUHS matters.

6.2.2. A Chair shall be designated from among the membership, as mutually determined by the membership.

6.2.3. The President of the USUHS shall provide an Executive Secretary and associated staff support.

6.2.4. The DoD Executive Agent shall be represented on the USUHS Executive Committee by the Surgeon General of the Navy.

7. RESPONSIBILITIES AND FUNCTIONS

7.1. The Assistant Secretary of Defense for Health Affairs, under the Under Secretary of Defense for Personnel and Readiness, shall:

7.1.1. In accordance with DoD Directive 5 136.1 (reference (f)), exercise authority, direction and control over the medical personnel, facilities, programs, funding, and associated resources in the Department of Defense as they relate to the USUHS.

7.1.2. Exercise the authorities over the USUHS vested in the Secretary of Defense by Chapter 104 of 10 U.S.C. (reference (b)), except that the authority to appoint the President of the USUHS is reserved to the Secretary of Defense.

7.1.3. Develop policies and issue policy guidelines to ensure the effective integration of USUHS programs and activities in the DoD Health Program. That includes, but is not limited to, the development of DoD Directives, the issuance of DoD Instructions, and OSD-level participation in the Planning, Programming, and Budgeting System process.

7.1.4. Ensure that the advice of the Board of Regents in matters of academic

affairs is considered, in accordance with the policy in subsection 5.1., above.

7.1.5. Ensure that the Board of Regents shall participate in the governance of the USUHS by advising the Secretary of Defense, through the ASD(HA), on academic affairs and on the administration and management of the USUHS.

7.1.6. Ensure that the President of the Uniformed Services University of the Health Sciences shall:

7.1.6.1. Make certain that educational programs leading to a Doctor of Medicine or other advanced degrees in the health professions meet the standards of applicable and recognized, accrediting, licensing, and certifying Agencies.

7.1.6.2. Carry out those responsibilities and functions pertaining to the supervision and management of University programs, activities, personnel, and resources as the ASD(HA) and Executive Committee prescribe.

7.1.7. Ensure that the Dean of the F. Edward Hebert School of Medicine shall develop and administer policies and procedures on the academic affairs of the F. Edward Hebert School of Medicine.

7.2. The Secretary of the Navy shall serve as the DoD Executive Agent for, administrative support of the USUHS, to include budget, personnel, information, facilities, and other resource responsibilities required for the mission of the USUHS.

7.2.1. Civilian personnel authorizations shall be under the purview of the DoD Executive Agent and civilian employees shall be carried on the rolls of the Department of the Navy.

7.2.2. The USUHS funding and personnel requirements shall not be offset against the Navy Surgeon General budget or work-year allocations.

7.3. The Director, Defense Legal Services Agency, shall provide legal advice and services for the USUHS.

7.4. The USUHS Executive Committee, consistent with the policy guidance of the ASD(HA), shall:

7.4.1. Oversee the operation of the USUHS and provide management direction to the President of the USUHS on the day-to-day operation of the USUHS.

7.4.2. Provide guidance to the President of the USUHS and advice to the ASD(HA) on the annual USUHS program and budget submissions.

7.4.3. Provide advice to the ASD(HA) on health policy matters relating to the USUHS.

8. RELATIONSHIPS

8.1. In carrying out the responsibilities and functions of the chief executive officer of the USUHS, the President of the USUHS shall:

8.1.1. Obtain advice from the USUHS Executive Committee and the Board of Regents, as necessary to assist the President of the USUHS in performing the President's duties.

8.1.2. Coordinate and exchange information and advice with elements of the OSD and the other DoD Components having collateral or related responsibilities.

8.1.3. Make use of established facilities and services in the Department of Defense and other Government Agencies, when practical, to avoid duplication and achieve maximum efficiency and economy.

8.1.4. Consult and coordinate with other Governmental Agencies and non-Governmental agencies on matters for the mission and programs of the USUHS.

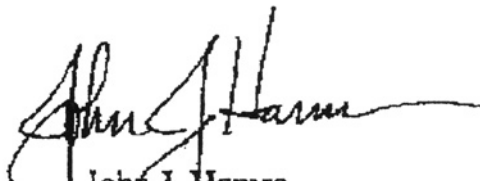
8.2. The Heads of the DoD Components shall coordinate with the ASD(HA) on all matters relating to the mission and programs of the USUHS.

9. AUTHORITIES

The President of the USUHS shall exercise the delegations of administrative authority in enclosure 2.

10. EFFECTIVE DATE

This Directive is effective immediately.



John J. Hamre
Deputy Secretary of Defense

Enclosures - 2

E1. References, continued

E2. Delegations of Authority

E1. ENCLOSURE 1

REFERENCES, continued

- (e) Title 5, United States Code
- (f) DoD Directive 5136.1, "Assistant Secretary of Defense for Health Affairs (ASD(HA))," May 27, 1994
- (g) DoD Directive 8910.1, "Management and Control of Information Requirements," June 11, 1993
- (h) DoD 1400.25-M, "Department of Defense Civilian Personnel Manual (CPM)"; Chapter 400, "Employee Development and Performance;" Subchapter 451, "Awards;" December 1996, authorized by DoD Directive 1400.25, November 25, 1996
- (i) DoD Directive 5105.4, "Department of Defense Federal Advisory Committee Management Program," September 5, 1989
- (j) Executive Order 10450, "Security Requirements for Government Employment," April 27, 1953
- (k) Executive Order 12333, "United States Intelligence Activities," December 4, 1981
- (l) Executive Order 12958, "Classified Nation Security Information," April 17, 1995
- (m) DoD Directive 5200.2, "Department of Defense Personnel Security Program (DoDPSP)," May 6, 1992
- (n) DoD 5200.2-R, "Personnel Security Program," January 1987, authorized by DoD Directive 5200.2, April 9, 1999
- (o) Chapter 2 and Section 3122 of the Internal Revenue Code of 1954, as amended
- (p) Title 42, United States Code
- (q) Joint Federal Travel Regulations (JFTR), Volume 1, "Uniformed Service Members," current edition
- (r) Joint Travel Regulations (JTR), Volume 2, "Department of Defense Civilian Personnel," current edition
- (s) Section 412 of title 37, United States Code
- (t) Sections 3102 and 3702 of title 44, United States Code
- (u) DoD Directive 5015.2, "DoD Records Management Program," April 11, 1997
- (v) DoD 5025.1-M, "DoD Directives System Procedures," August 1994, authorized by DoD Directive 5025.1, June 24, 1994
- (w) DoD Directive 5200.8, "Security of DoD Installations and Resources," April 25, 1991

E2. ENCLOSURE 2

DELEGATIONS OF AUTHORITY

E2.1.1. Under the authority vested in the Secretary of Defense, and subject to the direction, authority, and control of the Secretary of Defense, the Under Secretary of Defense for Personnel and Readiness, and the ASD(HA), the President of the USUHS is hereby delegated authority, subject to subsection E2.1.2., below, as required in the administration and operation of the USUHS, to:

E2.1.1.1. Obtain such information, consistent with DoD Directive 8910.1 (reference (g)), and the advice and assistance from the DoD Components, as necessary, to carry out assigned responsibilities and functions.

E2.1.1.2. Communicate directly with applicable DoD Component personnel on matters related to the mission and programs of the USUHS.

E2.1.1.3. Appoint civilian members of the faculty and staff under salary schedules and grant retirement and other related benefits prescribed by the Secretary of Defense so as to place the employees of the USUHS on a comparable basis with the employees of fully accredited schools of the health professions within the vicinity of the District of Columbia, as provided by law (reference (b)).

E2.1.1.4. Exercise the powers vested in the Secretary of Defense by 5 U.S.C. 301, 302(b), 3101, and 5107 (reference (e)) on the employment, direction, and general administration of USUHS civilian personnel.

E2.1.1.5. Fix rates of pay for wage-rate employees exempted from the "Classification Act of 1949" by Section 5102 of reference (e) on the basis of rates established under the Federal Wage System. The fixing of such rates shall follow the wage schedule established by the DoD Wage Fixing Authority.

E2.1.1.6. Administer oaths of office to those entering the Executive Branch of the Federal Government, in accordance with Section 2903 of reference (e), and designate in writing, as may be necessary, officers and employees of the USUHS to perform that function.

E2.1.1.7. Establish a USUHS Incentive Awards Board and pay cash awards to, and incur necessary expenses for the honorary recognition of, civilian employees of the Government whose suggestions, inventions, superior accomplishments, or other

personal efforts, including special acts or services, benefit or affect the USUHS or its subordinate activities, in accordance with 5 U.S.C. 4503; DoD 1400.25-M, Chapter 400, Subchapter 45 1 (references (e), and (h)); and Office of Personnel Management (OPM) regulations.

E2.1.1.8. Maintain an official seal and attest to the authenticity of official USUHS records under that seal.

E2.1.1.9. Establish advisory committees and employ part-time advisors, as approved by the Secretary of Defense, for the performance of USUHS functions consistent with the 10 U.S.C. 173 (reference (b)), Section 3109(b) of reference (e), and DoD Directive 5105.4 (reference (i)).

E2.1.1.10. In accordance with E.O.s 10450, 12333, and 12958; and DoD Directive 5200.2 (references (g) through (m)), as applicable:

E2.1.1.10.1. Designate any position in the USUHS as a "sensitive" position.

E2.1.1.10.2. Authorize, in case of an emergency, the appointment of a person to a sensitive position in the USUHS for a limited period of time and for whom a full field investigation or other applicable investigation, including the National Agency Check, has not been completed.

E2.1.1.10.3. Initiate personnel security investigations, and, if necessary, in the interest of national security, suspend a security clearance for personnel assigned, detailed to, or employed by the USUHS. Any action under this paragraph shall be taken, in accordance with procedures prescribed in DoD 5200.2-R (reference (n)).

E2.1.1.11- Act as the agent for the collection and payment of employment taxes imposed by Chapter 21 of the Internal Revenue Code of 1954, as amended (reference (o)); and, as such agent, make all determinations and certifications required or provided for under Section 3122 of reference (o), and Sections 205(p)(1) and 205(p)(2) of the "Social Security Act," as amended (42 U.S.C. 405(p)(1) and 405(p)(2), reference (p)) about USUHS employees.

E2.1.1.12. Authorize and approve the following:

E2.1.1.12.1. Temporary duty travel for military personnel assigned or detailed to the USUHS, in accordance with the JFTR, Volume 1 (reference (q)).

E2.1.1.12.2. Travel for USUHS civilian personnel, in accordance with the JTR, Volume 2 reference (r)).

E2.1.1.12.3. Invitational travel to non-DoD employees whose consultative, advisory, or other highly specialized technical services are required in a capacity that is directly related to, or with, USUHS activities, in accordance with the JTR, Volume 2 (reference (r)).

E2.1.1.12.4. Overtime work for the USUHS civilian personnel, in accordance with Chapter 55, Subchapter V, of 5 U.S.C. (reference (e)) and applicable OPM regulations.

E2.1.1.13. Approve the expenditure of funds available for travel by military personnel assigned or detailed to the USUHS for expenses incident to attendance at meetings of technical, scientific, professional, or other similar organizations in such instances when the approval of the Secretary of Defense, or designee, is required by 37 U.S.C. 412 (reference (s)) and Sections 4110 and 4111 of reference (e).

E2.1.1.14. Develop, establish, and maintain an active and continuing Records Management Program under 44 U.S.C. 3102 and DoD Directive 5015.2 (references (t) and (u)).

E2.1.1.15. Utilize the Government International Merchant Purchase Authorization Card for making micro-purchases of material and services, other than personal services, for the USUHS, when it is determined more advantageous and consistent with the best interests of the Government.

E2.1.1.16. Authorize the publication of advertisements, notices, or proposals in newspapers, magazines, or other public periodicals, as required for the effective administration and operation of the USUHS consistent with 44 U.S.C. 3702 (reference (t)).

E2.1.1.17. Establish and maintain, for the functions assigned, an applicable publications system for the promulgation of common supply and service regulations, instructions, and reference documents, and changes thereto, under the policies and prescribed procedures in DoD 5025.1-M (reference (v)).

E2.1.1.18. Enter into support and service agreements with the Military Departments, the other DoD Components, and the other Government Agencies, as required for the effective performance of USUHS functions and responsibilities.

E2.1.1.19. Enter into and administer contracts, directly or through a Military Department, a DoD contract administration services component, or other Federal Agency, as applicable for supplies, equipment, and services required to accomplish the mission of the USUHS. To the extent that any law or E.O. specifically limits the exercise of such authority to persons at the Secretariat level, such authority shall be exercised by the applicable Under Secretary of Defense or Assistant Secretary of Defense.

E2.1.1.20. Establish and maintain applicable property accounts for the USUHS, and appoint Boards of Survey, approve reports of survey, relieve personal liability, and drop accountability for USUHS property in the authorized property accounts that is lost, damaged, stolen, destroyed, or otherwise rendered unserviceable, in accordance with applicable laws and regulations.

E2.1.1.21. Promulgate the necessary security regulations for the protection of property and places under the jurisdiction of the President of the USUHS, under DoD Directive 5200.8 (reference (w)).

E2.1.1.22. Exercise the authority delegated to the Secretary of Defense by the Administrator of the General Services Administration for the disposal of surplus personal property.

E2.1.2. The delegations of authority provided by subsection E2.1.1.) above, are also subject to the following, in order of precedence:

E2.1.2.1. The authority, direction, and control of the ASD(HA).

E2.1.2.2. The management direction and control of the USUHS Executive Committee.

E2.1.2.3. Regulations and procedures of the DoD Executive Agent, applicable to the USUHS, under subsection 7.2. of the Directive, for administration of the USUHS.

E2.1.3. The President of the USUHS may redelagate those authorities, as applicable, and in writing, except as otherwise specifically indicated in subsection E2.1.1. through subsection E2.1.2.3., above, or as otherwise provided by law or regulation.

University Strategic Plan

A useful strategic plan continues to reflect the changing environment. It is a perpetual work-in-progress. In the FY 1998 report, the University clearly outlined the basic objectives under each goal. During FY 1999, the University began adding performance measures to the objectives. As work commenced, each of six goal groups recognized that existing objectives did not necessarily lend themselves to measurement. Consequently, several objectives have been or are being rewritten to allow measurement criteria to be developed. This year's edition of the University's strategic plan is a snapshot of the progress in rewriting many objectives. Performance measures are being drafted at this time. In our next report, the University will have a solid combination of objectives and associated performance measures.

University Strategic Plan

Goal 1

Preeminence in the Academics of Military and Operational Medicine

The Uniformed Services University of the Health Sciences will be recognized in the government and public sectors as the preeminent national leader in military and operational medicine as demonstrated by excellence in education, training, consulting, and applied research.

University Goal 1 Link with the Military Health System Strategic Plan:

MHS Goal 1, Joint Medical Readiness: We will help ensure that military members of the Armed Forces attain an optimal level of fitness and health and are protected from the full spectrum of medical and environmental hazards. Our medical forces will meet the challenges of a rapidly changing continuum of Service-specific, joint, and combined military operations anywhere at anytime.

MHS Goal 2, Benchmark Health System: We will be the world's best integrated health system.

MHS Goal 5, Training and Skills Development. We will train and develop our people for their roles in war and peace.

Strategy 1.1 We will establish and maintain a continuum of military medical education extending throughout the careers of uniformed health professionals that meets the joint medical readiness needs of the services and conforms to national standards.

1.1.1 Educational programs will meet readiness requirements of the Services.

1.1.2 Educational programs will meet appropriate national standards for quality.

1.1.3 Educational programs will include emphasis on professional values and behavior, especially the values and behaviors appropriate to Uniformed Service officers.

1.1.4 Establish a continuing medical education process for developing leadership, professional and administrative skills for military medical professionals throughout their careers.

Strategy 1.2 We will provide programs and an environment designed to provide the opportunity for full personal and professional growth and development for our faculty, student body, and staff consistent with our mission.

1.2.1 Ensure that faculty and staff receive appropriate rewards for expertise in teaching, scholarly activities, and professional service.

1.2.2 Establish and maintain comprehensive educational programs and mentoring to provide for the development of professional and leadership expertise and skills for military medical professionals.

Strategy 1.3 We will develop and constantly improve programs of the highest quality to expand and enhance the knowledge and understanding of military and contingency medicine as a special field of study.

1.3.1 Establish a fellowship program to afford senior officers opportunities to work on military medical research projects and a Masters in Military Medicine by Academic Year 2001.

1.3.2 Continue to establish and maintain degree-granting mechanisms for non-residential students through off-campus distance learning.

Strategy 1.4 We will be recognized as the premiere consulting organization in various areas of military medicine.

1.4.1 Seek partnerships to develop or expand new education programs in health care and disease prevention tailored to the needs of the Services and other agencies within the Federal Government.

1.4.2 Seek partnerships to aid in the development of programs to prepare and train for humanitarian assistance operations.

Goal 2

Information Technologies and Resources

The University will develop and maintain integrated, standards-based information resources and applications responsive to the educational, clinical, research, and administrative needs of our customers.

University Goal 2 Link with the Military Health System Strategic Plan:

MHS Goal 6, Technology Integration: We will integrate technologies into best practices designed to achieve high quality clinical outcomes, decrease health care delivery costs, and improve management processes.

Strategy 2.1 We will develop and use a proactive system to evaluate, plan, establish priorities for, and fund the information resources needs of the University.

2.1.1 Create an Automated Information System Policy Committee (AISPC) combining currently fragmented groups into a single policy and planning body that will identify resources, collect customer needs, and review major information technology proposals, recommending policies and priorities to the President.

2.1.2 Determine the use and utility of information systems for our customers by establishing an annual evaluation system to assess customer satisfaction with information technologies and to identify new user requirements.

Strategy 2.2 We will plan for, implement, and maintain an information technology infrastructure for the University that attempts to stay ahead of user requirement.

2.2.1 Recommend a standard set of DoD compatible information technology tools on every desktop at the University to be supported by the University Information Systems (UIS).

2.2.2 Draft a Five-Year Information Technology Plan for the University that will be reviewed by the AISPC prior to being submitted to the President.

2.2.3 Develop the plans and procedures for an Enterprise Database that will support and connect information on personnel, student records, finances, facility data, research protocol information, animal housing, inventory control, and other University information systems, publishing general standards and core data element definitions.

2.2.4 Periodically conduct a survey of Internet bandwidth utilization and investigate alternative methods of providing adequate Internet access to our customers.

2.2.5 Develop and implement a plan to upgrade and stabilize the central (VAX) computers supporting the University financial management program and other legacy systems until these systems can be replaced or eliminated.

2.2.6 Develop a business plan for the extension of University electronic library services to other DoD agencies.

2.2.7 Develop a plan for a studio, expanded telecommunication capabilities, and other services required to carry out the mission of the Department of Medical Informatics and distance learning requirements.

2.2.8 Complete the implementation of a plan to replace outdated O&M funded computer systems, software, and networked peripherals on a three-year cycle by FY 2000.

2.2.9 Develop a plan for a computer-based testing center to meet National Medical Board Examination requirements.

2.2.10 Develop and implement a quality of service monitoring system for servers, the Internet, and the Local Area Network.

2.2.11 Design and prepare for recommendation policies, procedures, and components necessary to provide an adequate security barrier for University information systems.

Strategy 2.3 We will implement, maintain, and provide user training fix state-of-the-art information systems to support the student, faculty, and staff educational requirements, distance learning, video teleconferencing, recruitment, and educational program management.

2.3.1 Design, implement and maintain a records management system to support student, alumni, and faculty data with a goal of providing basic student records modules by the beginning of the 1999-2000 school year.

2.3.2 Complete a module for the production of standard student transcripts.

2.3.3 Develop system modules to support the electronic management of educational program information, student schedules, and room scheduling beginning with the replacement of existing Y2K incompatible programs.

2.3.4 Develop and present a series of ongoing programs to provide user training to students, faculty, and staff.

2.3.5 Design and produce a series of CD ROM disks and homepages to be utilized in the recruitment of new students.

Strategy 2.4 We will design, implement, and maintain computer-based tools to assist faculty in identifying research funding opportunities, drafting research proposals, obtaining clearances, maintaining research records, and publishing results.

2.4.1 Implement electronic grant management wherever feasible to include implementation of the latest grants management package, assuring that University Research Administration modules are fully compatible with the Enterprise Database and the Henry M. Jackson Foundation system.

2.4.2 Develop and implement routing and approval tools for assurance committees.

2.4.3 Ensure the latest versions of statistical programs, genetic databases, electronic journals, and biomedical databases are available to faculty and students.

2.4.4 Continue membership in the Community of Science, FEDIX Alert, and similar investigator notification systems.

Strategy 2.5 We will implement and maintain systems that administer and manage University resources to include the provision of meaningful resource management information in an automated, user friendly manner.

2.5.1 Examine the feasibility of the University implementing a Defense Finance and Accounting Service standard accounting system.

2.5.2 In concert with the DoD sponsored program (IMPAC) through US Bank, provide automated support programs that will assist credit card holders with their administrative responsibilities (budget, funds tracking, ancillary approvals, ordering, receiving, and reallocation of charges).

2.5.3 Implement modern automated solutions for the planning, budgeting, ancillary approving, ordering, receiving and tracking of University goods and services greater than \$2,500. (These purchases are not eligible for IMPAC use.)

2.5.4 Implement the DoD Defense Travel System.

2.5.5 Implement modern automated programs for controlling/tracking capitalized and non-capitalized University assets entered into the Property Book.

2.5.6 Implement modern automated interfaces/programs with the Defense Civilian Payroll System.

2.5.7 Implement modern automated inventory management systems to administer assets of the University Self Service Store.

2.5.8 Develop contracting vehicles that will enable the expeditious and best value acquisition of University automation resources.

Goal 3

Research and Development

The University will build, sustain, and publicize interdisciplinary research programs relevant to the needs of the Uniformed Services.

University Goal 3 Link with the Military Health System Strategic Plan:

MHS Goal 2, Benchmark Health System.: We will be the world's best integrated health system.

Strategy 3.1 In addition to the Interdisciplinary Programs in Neuroscience (including Behavioral Sciences) and Molecular and Cell Biology (including Genetics), we will develop and augment interdisciplinary programs in Infectious Diseases and Tropical Medicine, Casualty Care and Operational Medicine, Health Maintenance and Diseases Prevention, and Integrated Systems Biology.

3.1.1 Develop data collection system to establish baselines.

3.1.2 Monitor progress and improvement of program quality.

Strategy 3.2 We will improve the research environment for investigator-initiated research and collaboration and coordination with Uniformed Services' research and development programs; collaboration and coordination with Uniformed Services' clinical investigation programs; and collaboration with international programs.

3.2.1 Survey and enhance ongoing collaboration with Uniformed Services research and development at institutional and individual levels

3.2.2 Survey investigators to identify administrative barriers and solutions to overcome barriers.

Strategy 3.3 We will improve the public benefit by public disclosure via the media and through technology transfer.

3.3.1 Promote public disclosure of research findings.

3.3.2 Expand the technology transfer program.

Goal 4

Resource Stewardship

The University will acquire and effectively utilize resources for the development and enhancement of military medical readiness, programs, schools, and research.

University Goal 4 Link with the Military Health System Strategic Plan:

MHS Goal 4, Resources and Structure: We will identify and prioritize resource requirements and establish effective and efficient organizations to support the readiness and benefit missions

Strategy 4.1 We will acquire resources to accomplish the goals, strategies, and objectives of this strategic plan.

4.1.1 Obtain financial support from multiple sources, including appropriated funds, endowments, and Cooperative Research and Development Agreements.

4.1.2 Develop an appropriate manpower program.

4.1.3 Determine suitable space requirements and acquire requisite facilities.

Strategy 4.2 We will continuously improve administrative and financial systems, processes, and practices to ensure the effective, efficient, and equitable use of resources that are directed toward defined strategic goals.

4.2.1 Replace the College and University Finance System with a Windows-based, DoD-approved finance and accounting system.

Strategy 4.3 We will ensure that the University's input to the DoD POM process is in concert with this strategic plan and overall DoD guidance.

Goal 5

Organizational Culture

The University will promote and maintain a diverse, interdependent community of uniformed and civilian students, faculty, and staff responsive to the present and future needs of its internal and external customers.

University Goal 5 Link with the Military Health System Strategic Plan:

MHS Goal 5, Training and Skills Development: We will train and develop our people for their roles in war and peace.

Strategy 5.1 We will establish an enhanced sense of intramural community through effective cross-boundary communication, mutual collaboration, and continued reinforcement of the linkages between our multifaceted community, and the University mission, Vision, and guiding principles.

5.1.1 Identify opportunities for understanding mutual and diverse values and concerns and develop innovative solutions to community issues.

5.1.2 Promote and maintain respectful interaction between students, alumni, staff, faculty, and the Board of Regents through the timely sharing of information internally and externally with openness, candor, sensitivity, and reliability.

5.1.3 Foster and reward a team-based, customer-focused environment that values the contributions of each member of our community to achieve a culture characterized by cooperation, integrity, trust, and collegiality.

Strategy 5.2 We will establish development and retention programs that will make employment and collaboration at the University attractive and rewarding to a diverse population.

5.2.1 Assist each individual in establishing a self-development plan, including specific education and training requirements, that meets his or her personal mission within the University community.

5.2.2 Implement a training program for all supervisors on both civilian and military personnel issues utilizing existing civilian and military human resources.

Goal 6

University Recruitment and Minority Affairs

The University will recruit personnel, representative of our nation's diversity, to become successful uniformed leaders who respond to military requirements and the nation's medical and scientific needs, during peace and war.

University Goal 6 Link with the Military Health System Strategic Plan:

MHS Goal 1, Joint Medical Readiness: We will help to ensure that military members of the Armed Forces attain an optimal level of fitness and health and are protected from the full spectrum of medical and environmental hazards. Our medical forces will meet the challenges of a rapidly changing continuum of Service specific, joint, and combined military operations anywhere at anytime.

MHS Goal 3, Healthy Communities: We will forge partnerships to create a common culture that values health and fitness and empowers individuals and organizations to actualize those values.

MHS Goal 4, Resources and Structure: We will identify and prioritize resource requirements and establish effective and efficient organizations to support the readiness and benefit missions.

MHS Goal 5, Training and Skills Development: We will train and develop our people for their roles in war and peace.

Strategy 6.1 We will recruit quality people to become students at the University and thus, Department of Defense public servants and military personnel.

6.1.1 For direct recruiting, solicit qualified civilian candidates by attending designated recruiting fairs at civilian colleges and universities in all geographic areas.

6.1.2 For indirect recruiting, ensure the university is well-known, mail recruiting materials to all Reserve Officer Training Corps units, all military service academies, Education Centers at military bases world-wide, and civilian undergraduate pre-medical colleges indicated by the American College Application Services.

6.1.3 As an overall recruiting strategy, create a pipeline, a steady source of qualified candidates from both civilian and military sectors.

6.1.4 Strive to bring knowledge and a diverse population of qualified applicants for acceptance as future medical military leaders by representation on the Admissions Committee.

Strategy 6.2 We will formulate programs to meet the needs of disadvantaged (underrepresented minority) medical students and ensure their retention and successful completion of military and medical school training.

6.2.1 Deploy programs for retention of all future disadvantaged physicians. This includes former graduates assisting with recruitment and mentoring.

6.2.2 Use mentoring to promote development of competent military physicians to serve during peace and war.

6.2.3 Promote the training of satisfied physicians dedicated to military service through the GLAXO Wellcome Pathway.

6.2.4 Network through the Student National Medical Association to provide a forum for all students nationally to discuss issues and help each other attain their goal of becoming physicians.

6.2.5 Pursue opportunities to assist disadvantaged students in learning from mistakes of other underrepresented minority students by representation on the Academic Promotions Committee.

Strategy 6.3 We will develop and implement programs to ensure the success and retention of underrepresented minority students in the graduate education, and graduate nursing programs.

6.3.1 Increase retention by assisting graduate students with time management, study skills, and test-taking skills.

6.3.2 Use mentoring to promote and foster a supportive atmosphere for development of future scientists.

Strategy 6.4 We will recruit qualified men and women to increase ethnic and gender-based diversity by becoming medical school faculty at the University.

6.4.1 For active duty faculty recruiting, identify and resource active duty underrepresented minority physicians and scientists to become faculty members to educate and train military physicians and scientists.

6.4.2 For civilian faculty recruiting, pursue opportunities to recruit and develop partnerships for a diverse civilian University faculty.

Strategy 6.5 We will develop and implement programs to ensure the retention and advancement of underrepresented minority medical school faculty and women in medicine.

6.5.1 For mentoring, use best practice models to achieve maximum development of new culturally diverse university faculty members.

6.5.2 To promote retention, provide requested resources to assist Department Chairs with progressive development of faculty if necessary.

Strategy 6.6 We will initiate programs to promote positive community relations between our underrepresented minority students and faculty who will serve as role models and exemplary citizens for U.S. communities.

6.6.1 Encourage and support a policy of inclusion for communities representing a variety of backgrounds through our Youth in Science and Engineering Program through community volunteer work with schools.

6.6.2 Promote a cooperative relationship through representation on committees within the local community.

6.6.3 Actively sponsor national civilian minority organizations.

APPENDIX C

Selected Examples of Billeted and Off-Campus Members of USU Departments and Programs Who Received Special Recognition During 1999.

Anesthesiology - School of Medicine.

Lieutenant Colonel Geoffrey S.F. Ling, MC, USA, Associate Professor, Department of Anesthesiology, was one of three USU faculty who taught the Spinal Cord Injury Course at the most recent meeting of the American Academy of Neurology. Lieutenant Colonel Ling also worked during 1999 on a successful collaborative effort with **Ajay Verma, M.D., Ph.D., Assistant Professor, Department of Neurology**. Their effort focuses on the primary culture of brain cells, exploring in vitro toxicity produced by mimicking the biochemical changes thought to take place after head injury.

Sheila M. Muldoon, M.D., Professor and Chair, Department of Anesthesiology, is a Peer Reviewer for three journals: The Journal of Cardiovascular Pharmacology, the Journal of Anesthesiology, and the Journal of Anesthesia and Analgesia. Dr. Muldoon is a member of the Malignant Hyperthermia Hotline and the Scientific Committee for the American Society of Anesthesiology. She is the President of the North American Malignant Hyperthermia Registry and a Board Member of the Malignant Hyperthermia Association of the United States.

Biochemistry - School of Medicine.

Daniel Terbush, Ph.D., Assistant Professor, Department of Biochemistry, was awarded the third year of funding on the competitive Mallinckrodt Jr., Foundation Grant for his work, "The Biochemical, Genetic and Functional Characterization of EXO&O in the Yeast Secretory Pathway."

Biomedical Informatics - School of Medicine.

Robert W. Williams, Ph.D., Associate Professor, Department of Medical Informatics, co-authored the article, "Prion Domain Initiation of Amyloid Formation in Vitro from Native Ure2p," which appears in the February 26, 1999 issue of Science. The co-authors are: **Kimberly Taylor** and **Reed Wickner** from the Laboratory of Biochemistry and Genetics, National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health (NIH), and **Naiqian Cheng** and **Alasdair Steven** from the Laboratory of Structural Biology, National Institute of Arthritis and Musculoskeletal and Skin

Diseases, NIH. Also during 1999, Dr. Williams successfully coordinated the DoD Science and Engineering Apprentice Program (SEAP) for the University. The SEAP Program provides gifted high school students and teachers hands-on experience in a scientific laboratory under the guidance of a mentor. The program lasts eight weeks and students are paid and expected to produce a poster and a paper to document their work.

Dermatology - School of Medicine.

The SOM Department of Dermatology, under the leadership of Colonel Leonard C. Sperling, MC, USA, Professor and Chair, Department of Dermatology, in cooperation with the National Capital Area Consortium Dermatology Residency Program will be presenting its Third Annual Seminar, "Deployment Considerations for Military Health Care Providers" seminar on May 16, 2000. The Office of Health Affairs, Office of the Secretary of Defense, has mandated a comprehensive, ongoing and relevant course in military unique curriculum for interns, residents, and fellows during their training. The Department's course is designed to meet a significant portion of this requirement by discussing deployment planning, physician roles, chemical/biological threats, and other topics related to combat medicine. In the past, the course has covered subjects such as The Physician's Role in Operations Other Than War; Pre-deployment Planning; Chemical and Biological Threats in Future Deployments; Saving Your Skin: Warriors vs. the Environment; What Does Need to Know about Things that go Boom; Deployment Dermatology; and, Biological Warfare and Bioterrorism: Recognition, Protection and Treatment. The Department of Dermatology has been successful in securing nationally recognized speakers including a former USU student, **Dr. Robert Kadlec**, who is on the Staff of the Secretary of Defense. In addition, Colonel Sperling is a reviewer for the Journals of Dermatology and Dermatopathology. He is the Secretary-Treasurer of the Association of Military Dermatologists and serves as the Assistant Specialty Consultant (Dermatology) to the U.S. Army Surgeon General.

Family Medicine - School of Medicine.

Lieutenant Colonel Francis O'Connor, MC, USA, Assistant Professor, Department of Family Medicine, Ralph Oriscello, M.D., and Benjamin Levine, M.D., authored "Exercise-Related Syncope in the Young Athlete: Reassurance, Restriction or Referral." The article appeared in the November 1999 issue of American Family Physician, the first in a series of problem-oriented diagnosis articles. Guest editors of the series are Lieutenant Colonel O'Connor and **Colonel Jeannette South-Paul, MC, USA, Associate Professor and Chair, Department of Family Medicine.** Articles in the series will overlap areas of research interest in the Department. Topics planned for the series include exercise-related problems and a number of often-encountered problems in the office.

Lieutenant Colonel Wayne B. Jonas, MC, USA, Associate Professor, Department of Family Medicine, was featured by The NIH Catalyst in a front-page article of the January-February 1999 edition

for his work as Director of NIH's Office of Alternative Medicine. Lieutenant Colonel Jonas headed the office from July 1995 through 1998. The article pointed out that there is a growing public demand for research in alternative medicine approaches and recognized LTC Jonas' contributions.

Charles Privitera, M.D., Associate Professor and Director Mental Health Division, Department of Family Medicine, and the Department of Psychiatry, received the 1999 Nancy C.A. Roeske Certificate for Excellence in Medical Student Education, which is annually presented by the American Psychiatric Association (**APA**). The certificate recognizes outstanding and sustaining contributions made by a member of the USU faculty. Dr. Privitera received the certificate at the APA annual meeting in Washington, D.C.

Graduate Education Programs - School of Medicine.

Kimberly Byrnes received the Chesapeake Society for Microscopy Award for best young investigator presentation. She is a graduate student in the SOM Neuroscience Program. Ms. Byrnes was also selected during early 1999 to receive a summer research grant from the American Society of Laser Surgery and Medicine, Inc. She used the grant to conduct her research, "Low Power Laser Therapy Improves Regeneration of Transected Spinal Cord," in the SOM Department of Anatomy and Cell Biology.

Paul Lea IV, a graduate student in the Department of Physiology, received the 1999 Epilepsy Foundation Health Sciences Student Fellowship Award. The **\$2,000** award will be used to further his research, "NAAG Provides Neuroprotection Against Kainate in the Rat Dentate Gyrus."

Elizabeth Maloney is a Doctor of Public Health candidate in the Department of Preventive Medicine and Biometrics. Ms. Maloney's abstract, "Disease Risk in a Cohort of HTLV-1 Infected Jamaican Children Followed for Nine Years," was selected by the Delta Omega Society for presentation at the 1999 annual meeting of the American Public Health Association in Chicago, Illinois. The poster sessions showcase excellent scholarship and research of students in public health programs.

Commander Barry Miller, USPHS, an Epidemiologist in the Division of Cancer Control and Population Sciences, and a Doctor of Public Health candidate in the Department of Preventive Medicine and Biometrics, received the National Institutes of Health Director's Award for 1998. On short notice, Commander Miller and members of his branch prepared and gave an oral presentation to the Director of the National Cancer Institute on the most recently collected incidence, mortality, and survival trend data, as well as state-of-the-knowledge discussions on the descriptive epidemiology for seven major cancer types. Commander Miller also headed up two cancer presentations and contributed to two other presentations.

Holly Nash received the Graduate Women in Science - Sigma Delta Epsilon Fellowship, which consists of a cash award and mention in the Graduate Women in Science newsletter. She is a student in the Neuroscience Program.

Jyoti Ramdas, Ph.D., Postdoctoral Fellow and **Jeffrey Harmon, Ph.D., Professor, Department of Pharmacology**, published an article, "Glucocorticoid-Induced Apoptosis and Regulation of NF-KappaB Activity in Human Leukemic T Cells," in the journal, Endocrinology.

Diana Schneider, a Doctor of Public Health candidate in the Department of Preventive Medicine and Biometrics, received the "Best Overall Prize Paper" award from the American Society for Colposcopy and Cervical Pathology at its 1998 biennial meeting in Scottsdale, Arizona. USU's Psi Chapter of the Delta Omega Society selected her abstract, "Cervicography Screening for Cervical Cancer Among 8,460 Women in a High-Risk Population," for submission to the national competition. The abstract was also one of 10 selected by the society for a special poster session at the annual meeting of the American Public Health Association in Washington, D.C., in November 1998. The poster session show-cased excellent scholarship and research of students in public health programs.

Nicole Vaughn, second-year Medical Psychology Graduate Student, was awarded a Ford Foundation Predoctoral Fellowship. The goal of this Fellowship Program for Minorities is to increase the presence of underrepresented minorities on the faculties of the Nation's colleges and universities. The program identifies individuals of demonstrated ability and provides opportunities for them to engage in advanced study leading to the Doctor of Philosophy (Ph.D.) Degree in the behavioral, natural, and biological sciences and engineering.

The Graduate School of Nursing.

Faye G. Abdellah, Ed.D., Sc.D., RN, Professor and Dean, Graduate School of Nursing, received the Richard A. Kern Lecture Award at the 115th meeting of the Association of Military Surgeons of the United States (AMSUS). Dean Abdellah was honored for her lecture, "Telehealth: A Key to Achieving Fitness for Global Readiness." The award, established in 1979, honors Rear Admiral Richard A. Kern, a past president of AMSUS. It is presented annually to an individual who has made an outstanding contribution in the field of federal medicine for a lecture on federal medicine.

Colonel Quannetta Edwards, USAF, NC, Assistant Professor, Graduate School of Nursing, received the Uniformed Nurse Practitioner Association's Scientific Award for Excellence in Research for her work, "Health Behavior of Prostate Cancer Screening: African-American Men's Perception and Comparison to Health." Colonel Edwards received the award and a cash prize at the association's 14th annual conference, held in Austin, Texas, during November of 1998.

Maura McAuliffe, Ph.D., CRNA, Acting Chair and Program Director, Department of Nurse Anesthesia, Graduate School of Nursing, and A. Leon Moore, Ph.D., Director of the Center for Informatics in Medicine, were interviewed by the Government Computer News magazine during May of 1999 regarding USU's use of the internet and teleconferencing for teaching purposes within the Graduate School of Nursing.

Medical History - School of Medicine.

Dale C. Smith, Ph.D., Professor and Chair, Department of Medical History, and Second Lieutenant Robert Mabry, President of the USU fourth-year medical school class, were featured in a History Channel series entitled, "Suicide Missions," in a segment called, "Combat Medics." Second Lieutenant Mabry was an army medic prior to attending medical school at USU. The series aired on February 25, 1999. Dr. Smith is currently on the editorial board of The Bulletin of the History of Medicine; and, he has just started a term as historical consultant to Military Medicine. Dr. Smith also was interviewed for the History channel series, Modern Marvels, segment "Battlefield Medicine" which aired on March 30, 1999. Dr. Smith gave the annual Postgraduate Medicine Lecture of the Interstate Postgraduate Medical Association of North America on November 11, 1999. His lecture was titled "When An M.D. Is Not Enough The Development of Specialization in North American Medicine."

Medical Students - School of Medicine.

Ensign David Brett-Major, USN, first-year medical student, and his preceptor, **Captain Gerald Quinnan, Jr., U.S. Public Health Service, Department of Preventive Medicine and Biometrics,** won a 1999 \$3,000 Alpha Omega Alpha Honor Medical Society Research Fellowship.

Second Lieutenant David Harper, USA, second-year medical student, won the 1999 Washington Society for the History of Medicine Pfizer Prize for the best history of medicine paper in the Washington, D.C. area.

Second Lieutenant Bryan Johnson, USA, USU Class of 2002, submitted an article for Newsweek Magazine; **Second Lieutenant Johnson's** article was one of four selected for publication out of approximately 600 submissions, and was featured in the July 26, 1999 issue. The title of Second Lieutenant Johnson's article was, "How the Navy Changed My Life."

Second Lieutenant Jon Robitschek, USAF, USU Class of 2001, was selected as one of only 42 medical students from across the U.S. to participate in the 1999-2000 Class of the Howard Hughes Medical Institute - National Institutes of Health (NIH) Research Scholars Program (Cloister Program).

Second Lieutenant Robitschek was chosen from 228 applicants representing 91 medical schools. The selection process involved a comprehensive review of the submitted written application and supporting documents, followed by individual interviews of selected applicants conducted by a committee of senior NIH scientists and senior scientific officers of the Howard Hughes Medical Institute. Second Lieutenant Robitschek will spend a year conducting research in an NIH laboratory of his choice. Salaries and expenses are provided by the Howard Hughes Medical Institute.

2nd Lieutenant Abraham Suhr, USA (Class of 2001), is the first recipient of the Ira Telford Award for Excellence in Practical Histology. The award, which goes to the medical student with the best overall performance on the practical examinations in the first-year Cell Biology and Histology Course, is named for **Ira Telford**, who taught Microscopic Anatomy, now called Anatomy I and IV, to USU's first-year medical students from 1978 - 1992.

Medical and Clinical Psychology - School of Medicine.

Michael Feuerstein, Ph.D., Professor, Department of Medical and Clinical Psychology, received Board Certification by the American Board of Professional Psychology (ABPP) in Clinical Health Psychology. This Diplomate status is the highest distinction that professional psychology awards its practitioners. Dr. Feuerstein was also appointed a member of the National Academy of Sciences/Institute of Medicine's Panel on Musculoskeletal Disorders and the Workplace. This Panel is tasked by the U.S. Congress to conduct a two-year study of the nature, causes, and prevention of work-related musculoskeletal injuries in the workplace.

Neil Grunberg, Ph.D., Professor, Department of Medical and Clinical Psychology, was interviewed by Jan Beiting with Military Medical Technology during February of 1999. The interview covered smoking cessation programs in the Department of Defense, specifically new programs and the effectiveness of nicotine replacement aids. Dr. Grunberg is a consultant to the U.S. Surgeon General on smoking and has edited two reports on smoking in the Department of Defense. In addition, Dr. Grunberg is serving as a scientific consultant to the Department of Defense's Prevention, Safety and Health Promotion Council's (PSHPC) Alcohol Abuse and Tobacco Use Reduction Committee. PSHPC's purpose is to advance health and safety promotion and injury/illness prevention.

Medicine - School of Medicine.

Lieutenant Colonel Stephen A. Brietzke, USAF, MC, Assistant Professor, Department of Medicine, was recognized as the "overall DoD champion" for the national conference that is developing and implementing Department of Defense/Department of Veterans Affairs-wide evidence-based clinical practice guidelines for diabetes mellitus. When finalized, the guidelines will form the basis of national-

level primary practice recommendations. A multidisciplinary panel of experts from the three Services and the VA representing primary care, therapeutics (pharmacy), endocrinology/diabetes, maternal/child health, nutritional medicine, nursing, ophthalmology, podiatry and nephrology convened in January 1999 to review major clinical studies affecting diabetes care. Based on the review, evidence-based practice guidelines will be developed. The guidelines were broken down into eight different modules that included primary eye, eye care, self-management education, hypertension and renal disease. Lieutenant Colonel Brietzke was responsible for reviewing the entire product module-by-module and ensuring that experts agree on all areas for which recommendations are made. In final form, the diabetes guidelines will be printed as a VA publication and in some comparable form in the DoD. It is envisioned that Web-based downloads will be available from DoD sites.

Andre T. Dubois, M.D., Ph.D., Research Professor, Department of Medicine, in collaboration with Ora Vax Inc., is providing promising data that shows how a candidate vaccine administered to laboratory animals has been effective in fighting the bacterium that causes peptic ulcer disease and stomach cancer. The research results were published in the September 1998 edition of *Infection & Immunity*. Dr. Dubois' paper, "Immunization Against Natural Helicobacter Pylori Infection in Nonhuman Primates," was published in the Journal Highlights section of the November 1998 American Society for Microbiology News.

Major William Gilliland, MC, USA, Assistant Professor, Department of Medicine, and **Lorraine Shapeero, M.D., Associate Professor, Department of Radiology and Nuclear Medicine**, co-authored the paper, "Osseous Sarcoidosis; Clinical, Radiographic, and Therapeutic Observations," for the September 1998 issue of the *Journal of Clinical Rheumatology*.

Robert E. Goldstein, M.D., Professor and Chair, Department of Medicine, and Dr. Eric Holmboe co-authored an editorial which appeared in the February 10, 1999 issue of the *Journal of the American Medical Association (JAMA)*. The editorial accompanies the JAMA article entitled, "Minor Changes on Electrocardiograms, Findings from Exercise Stress Tests Predict Risk of Death." Med-Cast Medical News, an on-line news service for physicians based in Seattle, Washington, interviewed Dr. Goldstein reference the February 10th editorial.

Major Mark C. Haigney, USAF, MC, Director, Division of Cardiology, Department of Medicine, was recognized during late 1999 by the Air Force for his assistance in the investigation of an F-16 crash and the loss of its pilot in July of 1999. Major Haigney responded to questions from the Air Force Safety Investigation Board Flight Surgeon and, within three days, provided tables and references that helped the Board reach its accident findings.

Major Paul Hemmer, USAF, MC, Assistant Professor, Associate Clerkship Director and Director of Undergraduate Educational Research for the Department of Medicine's Educational Programs Division, was elected to the Governing Council of the Clerkship Directors in Internal Medicine (CDIM). The CDIM is the national organization for medical clerkship directors. Major Hemmer is also the Co-Chair of the CDIM's Research Committee. In September, he presented a paper at the Association for Medical Education in Europe in Linköping, Sweden; and, in November of 1999, he presented another

in a series of papers establishing the validity of a medicine evaluation system at the Research in Medical Education Conference for the Association of American Medical Colleges.

Louis N. Pangaro, M.D., Professor and Vice-Chair of Educational Programs, Department of Medicine, is the editor and co-author of a chapter on Evaluation and Grading for the second edition of the Handbook for Clerkship Directors which is to be published during the Spring of 2000 by the Association of American Medical Colleges (AAMC). Additionally, Dr. Pangaro's research project on Reliable and Valid Assessment for the AAMC's Group on Educational Affairs has established two multi-school projects to determine whether the USU SOM Department of Medicine's evaluation system will demonstrate proven reliability, validity, and inter-site consistency in other schools and in clerkships other than medicine. Also during 1999, the Army Chapter of the American College of Surgeons presented the Master Teacher Award to Dr. Pangaro. This award honors a Fellow or higher member of the Chapter for his inspiration to students.

Major Michael J. Roy, MC, USA, Assistant Professor, Department of Medicine, developed a new course in Military Medical Humanitarian Assistance. The Military Medical Humanitarian Assistance Course is being established by the Department of Medicine to better prepare military internists who may be called upon to provide medical care on a humanitarian mission. The three-day course will be directed by Major Michael Roy, Director, Division of Military Internal Medicine, and will feature numerous USU faculty members. The course will focus on adapting internists' skills and knowledge to austere environments, in addition to expanding the usual realm of the internist to cover issues in pediatrics, dermatology, orthopedics, infectious diseases, and women's health. It is anticipated that a version of the course will be made available to the Internet for adaptation by local military facilities.

Aiping Zhao, M.D., Visiting Scientist, Division of Nephrology, Department of Medicine, was recognized on June 9, 1999, by the National Kidney Foundation/National Capital Area's Annual Fellow Research Forum. He was one of four people selected from 24 candidates to present his research results at the Forum. Dr. Zhao received the Fellow Research Award and a cash prize. His presentation was titled, "Disulfiram as a Very Potent Inhibitor Against TNF-alpha induced Apoptosis in a Porcine Proximal Tubular Cell Line, LLC-PK1 Cells." Prior to coming to USU in November of 1988, Dr. Zhao was an Associate Professor and Vice Chairman, Department of Biochemistry, Guangdong College of Pharmacy, in the Peoples Republic of China. He holds graduate degrees from Xuzhou Medical College and from Jiangsi Medical College, Peoples Republic of China. Dr. Zhao works under the leadership of **Dr. Przemyslaw Hirszel** and **Dr. Xiaoming Zhou** in the Division of Nephrology, Department of Medicine.

Division of Clinical Pharmacology and Medical Toxicology, Department of Medicine. The Division of Clinical Pharmacology and Medical Toxicology is funded by the National Institutes of Health, National Institute on Drug Abuse, Medications Development Division, to conduct Phase I and early Phase II clinical research to support the development of drugs being investigated for the treatment of substance abuse. The funding provides for a ten-bed, telemetry capable, self-contained research ward with dedicated research nurses and staff to provide 24-hour per day, 7 days per week coverage for research subjects. Many of the studies conducted in the Clinical Pharmacology Unit (CPU) are done in collaboration with investigators at the National Institutes of Health and other local medical schools including Johns Hopkins in Baltimore, Maryland. **Louis R. Cantilena, Jr., M.D., Ph.D., Associate Professor, Department of**

Medicine, and Director, Division of Clinical Pharmacology and Medical Toxicology, serves as Medical Director for the unit. The CPU has been in place since 1997. The full-time staff includes dedicated research subject recruiters, data managers, nursing managers, and clinical research nursing staff.

Microbiology and Immunology - School of Medicine.

Christopher C. Broder, Ph.D., Assistant Professor, Department of Microbiology and Immunology, and an international team of researchers announced during mid-1999 that they had discovered a link between key proteins used by the AIDS virus to enter the immune cells it infects. Based on their findings, Dr. Broder and the other scientists have designed a vaccine which they have begun testing on animals, and which they hope may lead to an HIV vaccine. Their research is published in the recent Proceedings of the National Academy of Sciences.

Franziska B. Grieder, D.V.M., Ph.D., Assistant Professor, Department of Microbiology and Immunology, will use a four-year \$650,000 grant from the Department of the Army's Medical Research and Materiel Command and USU's newly-renovated bio-containment laboratory to conduct her research on understanding VEE (Venezuelan Equine Encephalitis virus) induced disease at the molecular level. Using molecularly cloned viruses, she will test her hypothesis that VEE not only infects neurons, but also glial cells, which surround and support neurons, contributing to their survival. Ideally, her research will provide insight into the treatment and prevention of virally induced, and other types of nervous system disorders by determining the specific relationship between VEE and glial cells, which results in the degeneration of neurons.

Research by **Stephanie Vogel, Ph.D., Professor, Department of Microbiology and Immunology**, working in collaboration with **Radha Maheshwari, Ph.D., Professor, Department of Pathology**, has shown that antimalarial drugs enhance replication of different viruses in mice. Their findings were accepted by The American Journal of Tropical Medicine and Hygiene during 1999.

Military and Emergency Medicine - School of Medicine.

Lieutenant Colonel John H. Hagmann, MC, USA, Assistant Professor, Department of Military and Emergency Medicine (MIM), received an award from the Secret Service for helping to save the life of an individual going through new agent training during 1999. Lieutenant Colonel Hagmann, also a member of the MIM Casualty Care Research Center, was providing operational medical support as the duty medical officer when the trainee became ill. It was later learned that the individual was suffering from kidney failure and near death, when Lieutenant Colonel Hagmann began emergency treatment and arranged for hospital transport.

Neurology - School of Medicine.

Captain Steven Braverman, MC, USA, Assistant Professor, Department of Neurology, published his paper titled "In-Patient Multidisciplinary Rehabilitation in Head Injury" in the Brain Injury Journal, June 1999.

Colonel Frederick Flynn, MC, USA, Chief, Neurology Department, Madigan Army Medical Center, and Assistant Professor, Department of Neurology, was selected by the American Academy of Neurology to direct a course titled "Neurology of Terrorism" during the next annual meeting in San Diego, California, in May of 2000.

Colonel Bahman Jabbari, MC, USA, Professor and Chair, Department of Neurology, was one of three USU faculty who taught the Spinal Cord Injury Course at the 1999 annual meeting of the American Academy of Neurology in Toronto, Canada. He also delivered a lecture at the annual meeting of the American Epilepsy Society in Orlando, Florida. Colonel Jabbari was reappointed as a Consultant to the Epilepsy Branch, National Institutes of Health during 1999; and, a paper by Colonel Jabbari and his co-author, **Major Kaveh Khajavi, USAF, MC, Assistant Professor, Department of Surgery,** appeared in the 1999 issue of Journal of Movement Disorders, Volume 14, pages 698-700. The paper was entitled, "Medullary Dystonia." Dr. Jabbari also published a second paper in the same issue entitled "Paroxysmal Tonic/Dystonic Episodes in Sjogren's Syndrome."

Ann Marini, M.D., Ph.D., Assistant Professor, Department of Neurology, was the lead author of the article "Intracellular Survival Pathways Against Glutamate Receptor Agonist Excitotoxicity in Cultured Neurons" which was published in the 1999 Annals of the New York Journal of Sciences, Volume 890, pages 421-437.

Ajay Verma, M.D., Ph.D., Assistant Professor, Department of Neurology, was a speaker in the Spinal Cord Injury Course at the 1999 annual meeting of the American Academy of Neurology; the subject of his talk was neuroprotection in spinal cord injury. Dr. Verma also spoke at the 3rd International Congress on Brain Injury, which was held in Quebec City, Canada, in June 1999. His lecture was entitled "Neuroprotection in Head Injury." During 1999, Dr. Verma published papers in three journals: the Journal of Neurochemistry, the Journal of Trends in Pharmacological Science, and the Journal of Brain Injury Source. Dr. Verma also published a paper in the Proceedings of the National Academy of Science.

Deborah Warden, M.D., Associate Professor, Department of Neurology, presented a lecture entitled "Irritability and Aggression Following Moderate-Sever TBI" at the 3rd International Congress on Brain Injury in Quebec City, Canada, in June of 1999. Dr. Warden and Major Braverman co-authored the article "In-Patient Multidisciplinary Rehabilitation in Head Injury." This article was published in the Brain Injury Journal, June, 1999.

Obstetrics and Gynecology - School of Medicine.

Lieutenant Colonel Matice Brown, MC, USA, Assistant Professor, Department of Obstetrics and Gynecology, was the lead author in the educational research study, "Videoteleconferencing for Administration of a Multi-Site Obstetrics and Gynecology Core Clerkship," accepted for publication in Obstetrics and Gynecology.

Lieutenant Rita Driggers, MC, USN, Senior Resident, Department of Obstetrics and Gynecology, is the first author on a publication representing one of her clinical research projects. The publication, "Delaying Surgery for Thyroid Cancer in Pregnancy," appeared in the Journal of Reproductive Medicine, Volume 43, No. 10, October 1998. Co-authors are **Lieutenant Colonel Jerome Kopelman, MC, USA**, and **Lieutenant Colonel Andrew Satin, USAF, Vice-Chair, Department of Obstetrics and Gynecology**.

William H.J. Haffner, CAPT, USPHS, M.D., Professor and Chair, Department of Obstetrics and Gynecology, was editor once again of Obstetric, Neonatal, and Gynecologic Care, published by the American College of Obstetricians and Gynecologists under a contract with the Indian Health Service. This reference text provides a practical approach to women's health care for family physicians and clinical nurses in the remote and frontier settings of the Indian Health Service and Tribal Programs. In addition Captain Haffner was elected to the Governing Council of the Association of Professors of Gynecology and Obstetrics, Washington, D.C., and to key committees of the American College of Obstetricians and Gynecologists, including the Practice Bulletins Committee for Gynecology and the Committee for Health Care for Underserved Women. During the Annual Meeting of the Armed Forces District of the American College of Obstetricians and Gynecologists which met during October of 1999, Captain Haffner presented a general session on faculty development for obstetrician-gynecologist medical officers at military teaching hospitals. He discussed general aspects of professional career modeling and development, and he also addressed the changes in the University Instruction 1100 on appointments, promotion, and tenure of faculty.

Commander Cynthia Macri, MC, USN, Assistant Professor, Department of Obstetrics and Gynecology, was appointed to the United States Medical Licensing Examination (USMLE) Step 3 Test Material Development Committee for Utilization of Resources. The USMLE, a joint program of the National Board of Medical Examiners and the Federation of State Medical Boards, provides a common evaluation system for measuring the knowledge and cognitive competence within a clinical context of applicants for medical licensure in the United States. The results of the USMLE are reported to state medical licensing authorities for use in granting the initial license to practice medicine.

Lieutenant Colonel Andrew Satin, USAF, MC, Associate Professor and Vice-Chair, Department of Obstetrics and Gynecology, was selected to be the Program Director for the integrated Uniformed Services Residency in Obstetrics and Gynecology located at the National Naval Medical Center and the Walter Reed Army Medical Center. In addition, he was named to the editorial board of Obstetrics and Gynecology, the premier, peer-reviewed journal in this specialty. Lieutenant Colonel Satin was the

lead author in the educational research study, "A Survey of Military Residencies Regarding 4th-Year Medical School Clerkships" published in Obstetrics and Gynecology.

USU and teaching hospital faculty in the Department of Obstetrics and Gynecology conducted a faculty development workshop in January of 1999. One of the sessions, "Working with Educational Data," focused on the use of videoteleconference technology for third-year clerkships. The department used the technology for more than six months to assess the performance of students at all clerkship sites to ensure uniformity of education and evaluation processes, regardless of where the students perform their OB/GYN rotations. Faculty participating in the session were **Lieutenant Colonel Alicia Armstrong, MC, USA**, Walter Reed Army Medical Center, Washington, D.C.; **Lieutenant Colonel Andrew Satin, USAF, MC, Vice-Chair, USU Department of Obstetrics and Gynecology**; **Lieutenant Colonel Matrice Browne, MC, USA, USU Clerkship Coordinator**; **Major Jeffrey Hines, MC, USA**, Brooke Army Medical Center, Fort Sam Houston, Texas; **Major Arthur Herpolsheimer, MC, USA**, Tripler Army Medical Center, Hawaii; and, **Captain William Haffner, USPHS, Professor and Chair, USU Department of Obstetrics and Gynecology**.

Pathology - School of Medicine.

Michael J. Daly, Ph.D., Assistant Professor, Department of Pathology and **Kenneth W. Minton, M.D., Professor, Department of Pathology**, co-authored the paper, "Whole-Genome Shotgun Optical Mapping of *Deinococcus Radiodurans*," which appeared in the September 3, 1999 issue of Science. Dr. Daly was also featured by a U.S. News and World Report feature article during December 1999. The story highlighted his work with *Deinococcus Radiodurans*, a microbe that has been re-engineered to exploit its utility in cleaning up toxic wastes such as those found at nuclear waste sites; according to the article, Dr. Daly's work has the promise to substantially reduce the estimated \$150 billion cost for nuclear waste cleanup. Dr. Daly's research was also featured in The New York Times, USA Today, and ABC's Nightline during 1999.

Medical researchers at USU are unraveling new links between malaria treatment and viral infections. Research by **Radha Maheshwari, Ph.D., Professor, Department of Pathology, Director of the Center for Combat Casualty and Life Sustainment Research**, and other members of his research group, working in collaboration with **Stephanie Vogel, Ph.D., Professor, Department of Microbiology and Immunology**, has shown that antimalarial drugs enhance replication of different viruses in mice. Their findings were accepted by The American Journal of Tropical Medicine and Hygiene during 1999. The other members of Dr. Maheshwari's team are: **Pankaj Seth, Postdoctoral Fellow, Pathology**; **Haresh Mani, Postdoctoral Fellow, Pathology**; **Anoop K. Singh, Research Instructor, Pathology**; **Krishna K. Banaudha; Subhashree Madhavan, Student Research Trainee, Pathology**; **Gurmel S. Sidhu, Research Associate Professor, Pathology**; and, **Jaya P. Gaddipati, Research Assistant Professor, Pathology**.

Special Note: HM1 Aaron Tyler, USN, USU Department of Pathology, was selected as the Enlisted Technical Leader for all Histopathology Technicians (8503)Navy-wide, during mid-1999. HM1 Tyler will advise the leadership of the Navy on all issues pertaining to Histopathology Technicians.

Pediatrics - School of Medicine.

Ildy M. Katona, CAPT, MC, USN, Professor and Chair, Department of Pediatrics, was elected as Chair of the Pediatric Rheumatology Sub-board of the American Board of Pediatrics for a two year term (1999 - 2000).

Pharmacology - School of Medicine.

Departmental Research Funding - New Extramural Research Support Received During 1999:

Beata Buza, Ph.D., Research Assistant Professor, received funding from the Defense/Veterans Head Injury Program (Opioid peptides and oxidative stress);

Jeffrey M. Harmon, Ph.D., Professor, was funded by the VA/DoD (Molecular regulation of corticosteroid receptor expression in stress-responsive cells);

Robert J. Lechleider, M.D., Assistant Professor, received funding from the Millheim Foundation for Cancer Research (Identification and cloning of TGF-B responsive genes);

John M. Sarvey, Ph.D., Professor, was funded by the Epilepsy Foundation (Cellular mechanism of hippocampal long-term potentiation); and,

Aviva J. Symes, Ph.D., Assistant Professor, received funding from the following: Defense/Veterans Head Injury Program (Role of cytokines in glial scar formation after traumatic brain injury); the American Heart Association (The role of protein tyrosine phosphatase SHP-2 in signaling by the GP130 cytokine receptor); and, the American Society for Pharmacology and Experimental Therapeutics (Summer 1999 Undergraduate Research Training Program).

Continuing Extramural Research Support In 1999.

Brian M. Cox, Ph.D., Professor and Chair - NIDA, NIH (Regulation of opioid systems);

Jeffrey M. Harmon, Ph.D., Professor - NCI, NIH (Steroid resistance in human leukemic cells);

Cinda J. Helke, Ph.D., Professor - NINDS, NIH
(Neurotransmitters and visceral afferent neurons); and,

Aviva J. Symes, Ph.D., Assistant Professor - NINDS, NIH (Cytokine regulation of VIP gene expression. Molecular cloning and characterization of a unique interferon-gamma- and lipopolysaccharide-inducible nuclear protein).

Intramural Research Funding.

Eight faculty members have approved intramural research protocols.

Pending Research Funding Applications.

Eleven research proposals from the Department are currently under review by extramural funding agencies.

Brian M. Cox, Ph.D., Professor and Chair, Department of Pharmacology, provided the following professional services during 1999: 1) Member of Council - American Society for Pharmacology and Experimental Therapeutics, 1997 through 2000; 2) Chairman, International Union of Pharmacology Receptor Nomenclature Committee Opioid Receptor Subcommittee, 1999 through 2001 ; 3) Chairman, Scientific Program Committee, International Pharmacology Congress, San Francisco, California, July 1999 through July 2002; 4) Member of Editorial Boards for the Journal of Pharmacology and Experimental Therapeutics, the Journal of Neurochemistry, and the Journal of Receptor Research, August 1998 through July 1999; and, 5), Secretary-Treasurer (elected), American Society for Pharmacology and Experimental Therapeutics. Dr. Cox also provided the following talks during 1999:

Grand Rounds: Update on opiate drug pharmacology: novel opioid peptides. Department of Neurology, Walter Reed Army Medical Center, January 1999;

Seminar: Endogenous opioids and their receptors; new developments. Pharmacology Colloquium for the Undergraduate Program in Pharmacology, SUNY, Stony Brook, New York, March 3, 1999;

Invited Participant, International Union of Pharmacology Receptor Nomenclature Committee Meeting, Paris, France, May 1999;

Discussion Leader: Opioid receptor nomenclature issues. International Narcotics Research Conference Annual Meeting, Saratoga Springs, New York, July 1999; and,

Invited Lecturer: Nociceptin: a new member of the opioid peptide family. The Victor Cohn Lecture, Department of Pharmacology, George Washington University School of Medicine, Washington, D.C., September 29, 1999.

Jeffrey Harmon, Ph.D., Professor, Department of Pharmacology, and Jyoti Ramdas, Ph.D., Postdoctoral Fellow, Department of Pharmacology, published an article, "Glucocorticoid-Induced Apoptosis and Regulation of NF-KappaB Activity in Human Leukemic T Cells, " in the journal, Endocrinology.

Cinda J. Helke, Ph.D., Professor, Department of Pharmacology, was selected as a member of the Scientific Program Committee of the American Society for Pharmacology and Experimental Therapeutics. She will serve on the Committee from 1999 through 2002.

John M. Sarvey, Ph.D, Professor, Department of Pharmacology, was selected to serve as a Consultant to the Armed Forces Epidemiology Board, Special Subcommittee to Review Draft Rand Report A Review of the Scientific Literature as it pertains to Gulf War Illnesses, Volume III, Pyridostigmine Bromide. He served from July through September of 1999.

Aviva J. Symes, Ph.D., Assistant Professor, Department of Pharmacology, presented Grand Rounds in Neurology, at the Walter Reed Army Medical Center, in March of 1999. He also presented a talk at the Neuroscience Center, Massachusetts General Hospital, Boston, Massachusetts, during March of 1999.

Zolton Szallasi, M.D., Assistant Professor, Department of Pharmacology, published "Overexpression of Protein Kinase C-delta Increases Tight Junction Permeability in LLC-PK1 Epithelia," in the American Journal of Physiology. Dr. Szallasi also presented the following talks:

Genetic Network Analysis - from the lab bench to computer and back - Intelligent Systems in Molecular Biology '99, in Heidelberg, Germany, in August of 1999;

Genetic Network Analysis - from the lab bench to computers and back - Pacific Symposium on Biocomputing 2000, Hawaii, January 1999;

Genetic Network Analysis - Chemical Industry Institute of Toxicology, Research Triangle Park, North Carolina, September 9, 1999; and,

Genetic Network Analysis in Light of Massively Parallel Biological Data Acquisition.
Center for Computational Medicine & Biology, Department of Biomedical Engineering, School of
Medicine, Johns Hopkins University, Baltimore, Maryland, April 29, 1999.

Preventive Medicine and Biometrics - School of Medicine.

Richard G. Andre, Ph.D., Professor; Lieutenant Colonel Scott Gordon, MS, Ph.D., Assistant Professor; Donald R. Roberts, Ph.D., Professor, and Ms. Penny Masuoka are leading the research funded by a 1998 grant from NASA which has allowed the Department to establish a remote sensing and geographic information system (GIS) lab at USU. The lab is a state-of-the-art facility that allows spatial analysis, analysis of satellite and aircraft data, and the creation of maps and images for research and training purposes. The researchers are currently mapping Bartonellosis patients in Peru and malaria patients in Belize and Thailand and comparing the spatial distribution of the diseases to vector (sand fly and mosquito) habitats mapped from aerial and satellite images. The ultimate goal is to map the risk of the diseases based on the proximity of the houses (patients) to the habitat of the vectors.

John H. Cross, Ph.D., Professor, Department of Preventive Medicine and Biometrics, and his collaborators in Nepal, with money from the U.S. Environmental Protection Agency, are actively working to understand the mechanisms of the transmission of Cyclospora. Cyclospora is a newly recognized foodborne pathogen that caused large diarrheal outbreaks in the United States and Canada. Dr. Cross also trains U.S. Department of State medical personnel in the laboratory recognition of parasitic diseases, helping to protect the health of U.S. citizens overseas.

Deborah C. Girasek, MPH, Ph.D., Assistant Professor, Department of Preventive Medicine and Biometrics, was recognized when her work was published as lead article, and the subject of an editorial, in the international journal Injury Prevention. She was also invited to present Grand Rounds at the Johns Hopkins School of Medicine's Welch Center for Prevention, Epidemiology and Clinical Research. Dr. Girasek also co-authored the injury prevention chapter of the American Psychological Association's soon-to-be-published text, Integrating Behavioral and Social Sciences with Public Health. And, Dr. Girasek was also appointed to the Department of Defense's Committee on Injury/Occupational Illness Prevention.

Captain Larry W. Laughlin, MC., Ph.D., USN, Professor and Chair, Department of Preventive Medicine and Biometrics, inaugurated a Division of Social and Behavioral Sciences within the Department. This step recognizes Behavioral and Social Science as a core discipline of Public Health and Preventive Medicine. It also positions the Graduate Program to better support DoD's increased emphasis on prevention and optimizing force readiness. In June 1999, **Deborah C. Girasek, MPH, Ph.D., Assistant Professor, Department of Preventive Medicine and Biometrics,** was appointed to be the Director of the new division. Also under the leadership of Captain Laughlin, a new Division of Aerospace Medicine was established at the University. The new division has the responsibility of developing an aerospace medicine program that provides medical students with the basic knowledge of this specialty.

Undergraduate educational efforts will focus not only on didactic programs, but also on flight surgeon practice experiences for fourth-year USU and Health Professions Scholarship Program (HPSP) students. The division will also develop an aerospace medicine tract for the graduate Masters in Public Health (MPH) Program.

Preceptor, **Captain Gerald V. Quinnan Jr., M.D., U.S. Public Health Service, and Professor, Department of Preventive Medicine and Biometrics**, and first-year medical student, **Ensign David Brett-Major, USN**, won a 1999 Alpha Omega Alpha Honor Medical Society Research Fellowship. Understanding the immunology of the human immunodeficiency virus (HIV) will be the key in developing a successful vaccine. Captain Quinnan and **Peng Fei Zhang, Visiting Scientist, Department of Preventive Medicine and Biometrics**, published several papers during 1999 that advanced our knowledge about HIV at the molecular level. They provided new information on how the virus is able to enter cells (Journal of Virology, 73:6598, 1999) and examined mechanisms that broaden the neutralizing antibody response during early chronic infection (Journal of Virology, 73:5225, 1999).

Donald R. Roberts, Ph.D., Professor, Department of Preventive Medicine and Biometrics, was interviewed by the British Broadcasting Company on October 28, 1998. The interview was based on an article he co-authored for the publication, Emerging Infectious Diseases, in 1997, entitled "DDT, Global Strategies, and a Malaria Control Crisis in South America." The number of people who die from malaria continues to increase. Dr. Roberts and his co-workers have been investigating the use of DDT in houses to prevent malaria infections since the early 70's. Because of a possible world-wide ban on the use and manufacture of DDT, Dr. Roberts renewed the debate on DDT use for malaria control. After the publication of the above mentioned paper in 1997, an open letter was signed by 387 scientists from almost 60 countries, including three Nobel Laureates, which presented a logical argument for the continued use of DDT in malaria control efforts. The United Nations Environment Programme is now considering making a possible exception to allow the use of DDT in malaria control activities.

Lieutenant Commander Philip A. Smith, MSC, USN, Assistant Professor, Department of Preventive Medicine and Biometrics, was the first author of "Conjugation of 7-Oxodehydroabietic Acid to Lysine, a Haptenation Mechanism for an Oxidized Resin Acid with Dermal Sensitizing Properties," published in 1999 by Applications of Occupational Environmental Hygiene, 14, pages 171-176.

Lieutenant Colonel Bonnie L. Smoak, MC, Ph.D., MPH, USA, joined the Department of Preventive Medicine and Biometrics in August of 1999 as the Director of the Division of Tropical Public Health. Lieutenant Colonel Smoak has considerable experience in tropical medicine and military operations. During her previous assignment in Kenya, she studied drug resistance in malaria parasites, diarrheal diseases, and hemorrhagic fevers. While deployed to Somalia and Haiti, she provided tropical medicine expertise and documented the importance of dengue and malaria as major causes of febrile illness in U.S. troops.

Psychiatry - School of Medicine.

Department Activities:

Conducted continuing medical education (CME) for State Department psychiatrists from April 26-30, 1999. The focus of the CME activity was on psychiatric responses to terrorism and other traumas;

Provided consultation to follow-up studies conducted on personnel surviving the embassy bombings in Africa; and,

The Family Violence and Trauma Project continued its work in understanding child and spouse abuse in the Army and identifying preventive interventions.

Etzel Cardena, Ph.D, Assistant Professor, Department of Psychiatry, was elected President of Division 30 (Psychological Hypnosis) of the American Psychological Association. Also, Division 30 selected Dr. Cardena's paper as the best theoretical paper at the association's annual meeting. In addition, Dr. Cardena has also been named as Associate Editor to two peer-reviewed journals, Trauma and Dissociation and Sleep and Hypnosis.

Richard Epstein, M.D., Adjunct Professor, Department of Psychiatry, Carol Fullerton, Ph.D., Research Associate Professor, Department of Psychiatry, and Robert Ursano, M.D., Professor and Chair, Department of Psychiatry, co-authored a study which appeared in the July 1998 edition of The American Journal of Psychiatry. The publication, "Posttraumatic Stress Disorder Following an Air Disaster: A Prospective Study," examined posttraumatic stress disorder in health care workers who responded to the 1988 accident at the Ramstein Air Base, Germany, air show that killed 70 people. Dr. Epstein was elected Trustee of the American Psychiatric Association.

Sheila Hafter Gray, M.D., Clinical Professor, Department of Psychiatry, was selected as the new President-elect of the American Academy of Psychoanalysis, of which she is currently a trustee. Dr. Gray is scheduled to take office as President of the Academy in May of 2000.

Commander Thomas Grieger, MC, USN, Associate Professor, and Lieutenant Colonel James R. Rundell, MC, USAF, Professor, Department of Psychiatry, traveled during June 1999 from Frankfurt, Germany, to Zagreb, Croatia, where they met with the Military Liaison Team and were introduced to the Deputy Health Minister for Defense. They were then transported to a military conference center in Crikvenica where they conducted a conference from June 8 through June 10, 1999. There were 38 attendees; most were clinicians, an even distribution of psychiatrists, psychologists, and general medical officers. Commander Grieger and Lieutenant Colonel Rundell presented on a number of topics, ranging from general psychiatric issues to specific identification and management of combat/trauma related psychiatric matters. The audience was particularly interested in the acute and chronic management of posttraumatic stress disorder.

James McCarroll, Ph.D., Research Professor, and Colonel Ann Norwood, MC, USA, (USU Class of 1981), Associate Professor, Family Violence and Trauma Project, Center for the Study of Traumatic Stress, Department of Psychiatry, traveled to Heidelberg, Germany, during 1999 to assist the family advocacy staff of the U.S. Army Europe (USAREUR) in understanding and interpreting increases in the Command's child and spouse abuse rates. Prior research by the Center on the prevalence of child and spouse abuse in USAREUR and the Army at large indicated the Command's child and spouse abuse rates were increasing relative to the rest of the Army. According to the Department of Psychiatry, various factors that might be responsible for the increase were examined, but there were no firm conclusions as to the basis of the increase. Dr. McCarroll and Colonel Norwood helped develop a preliminary strategy for exploring the increase, and the USAREUR staff will continue to examine the data. The Center is working with the Army in publishing a newsletter, Joining Forces. A major focus is research on child and spouse abuse.

Colonel Ann Norwood, MC, USA, Associate Professor, presented on Psychiatric Responses to Weapons of Mass Destruction at the federal symposium on this topic during the American Medical Association meeting in June of 1999.

Laurie Thayer, Data Manager, Department of Psychiatry, and a member of the Department of Psychiatry's Family Violence and Trauma Project, earned the 1999 Army Community Service Excellence Award for exceptionally meritorious service for her work following the January "60 Minutes" broadcast on domestic violence in the military. According to her citation, dated February 16, 1999, she responded quickly and accurately to a multitude of requests from all levels of the Army for statistical information on spouse and child abuse in the Army. Ms. Thayer also provided information to family advocacy program managers which allowed them to provide timely briefings to commanders at the general officer level.

E. Fuller Torrey, M.D., Director of the Stanley Laboratory for Brain Research, and Adjunct Professor, Department of Psychiatry, appeared on ABC News 20/20 on September 15, 1999. The Stanley Laboratory is part of the USU SOM Department of Psychiatry. Dr. Torrey, who has done extensive research into mental illness, including viral infections as a possible cause of schizophrenia and bipolar disorder, was interviewed by **Tom Jarrell** for a feature about Russell Weston, the man accused of killing two police officers in the U.S. Capitol during 1998. Dr. Torrey expressed his concern that although Weston was known to be unstable, he did not receive appropriate psychiatric treatment or monitoring. Earlier, during February of 1999, Dr. Torrey was interviewed by Bill Curtis for the Arts & Entertainment (A&E) program, "Investigative Reports." The interview concerned Dr. Torrey's laboratory brain bank and his research into the causes of schizophrenia.

Robert Ursano, M.D., Professor and Chair, Department of Psychiatry, received the Outstanding Faculty Member Award-PGY3 at the 1999 combined graduation ceremony for the National Capital Consortium of Graduate Medical Education Programs. Also, during May of 1999, Dr. Ursano appeared on NBC Nightly News where he discussed stress and trauma issues following the Columbine High School shooting.

An article by **Robert Ursano, M.D., Professor and Chair, Department of Psychiatry**, and members of his staff was published in the American Journal of Psychiatry (1999, Volume 156, pages 589-595). The publication, "Acute and Chronic Posttraumatic Stress Disorder in Motor Vehicle Accident Victims," may be accessed on the Internet at <<http://aip/psychiatryonline.org>>. Contributing authors were: **Carol S. Fullerton, Ph.D., Research Assistant Professor, Department of Psychiatry; Richard S. Epstein, M.D., Adjunct Professor, Department of Psychiatry; Brian Crowley, Adjunct Assistant Professor, Department of Psychiatry; Tzu-Cheng Kao, Ph.D., Associate Professor, Department of Preventive Medicine and Biometrics; Kelley Vance, Research Associate, Department of Psychiatry; Karrie J. Craig, Ph.D.; Angela L. Dougall; and, Andrew Baum, Ph.D., Adjunct Professor, Department of Psychiatry.**

Radiology and Nuclear Medicine - School of Medicine.

Vincent B. Ho, M.D., Associate Professor and Director of MR Research, Department of Radiology and Nuclear Medicine, codeveloped several novel techniques for MR angiography of the coronary and peripheral arteries in collaboration with scientists at GE Medical Systems, the National Institutes of Health, and the National Naval Medical Center. Their work was presented at the annual meeting of the International Society of Magnetic Resonance in Medicine (ISMRM) and the International Conference of the IEEE Engineering in Medicine and Biology Society. During 1999, 11 articles that Dr. He authored or co-authored were published in peer-reviewed journals.

Lieutenant Colonel Gael J. Lonergan, M.D., USAF, MC, Chief of Pediatric Radiology, serves as the radiologic consultant to the Armed Forces Center for Child Protection. During 1999, she reviewed over 40 cases for the Center and other TriService investigative agencies. Dr. Lonergan speaks at national and international meetings (including the American Academy of Pediatrics and the Radiologic Society of North America) on subjects pertaining to pediatric radiology. During the past year, she published five manuscripts in peer-reviewed journals and presented one scientific paper at the Society for Pediatric Radiology. She is also the director of the world-renowned, six-week course in Radiologic Pathology taught at the Armed Forces Institute of Pathology, where she serves as Chief of Pediatric Radiology. She delivered 25 hours of instruction to first, second, and fourth year medical students and presented at Pediatric Grand Rounds during 1999. Dr. Lonergan was consulted by the National Geographic Society for film interpretation on three mummified children recently discovered in the Andes; Dr. Lonergan spoke at the National Geographic Society about her findings in November of 1999.

Lorraine Shapeero, M.D., Associate Professor, Department of Radiology and Nuclear Medicine, and her co-investigators have developed a magnetic resonance imaging technique for evaluating malignant and aggressive soft tissue tumors after surgery, radiation therapy and chemotherapy. Their study of 98 patients, "Dynamic Contrast-enhanced MRI with Subtraction of Aggressive Soft Tissue Tumors after Resection," was published in Skeletal Radiology (Volume 27). Dr. Shapeero received the Certificate of Merit Award from the Radiological Society of North America for her exhibit, "The Proximal Tibiofibular Joint, Tumors, Trauma, and Biomechanics." The abstract for the exhibit was published in

the journal, Radiology. She also presented to the Society her research, "Long-term Follow-up of Aggressive Fibromatosis." Dr. Shapeero and **Major William Gilliland, MC, USA, Assistant Professor, Department of Medicine**, co-authored the paper, "Osseous Sarcoidosis: Clinical, Radiographic, and Therapeutic Observations," for the September 1998 issue of the Journal of Clinical Rheumatology. Dr. Shapeero's article, "Imaging of Systemic Lupus Erythematosus," appears in the November 1998 publication, Systemic Lupus Erythematosus. During 1999, Dr. Shapeero was selected to be a Consultant to the Editor of Radiology by the Board of Directors of the Radiological Society of North America; she was also elected to the Board of Directors of the Association of Medical Student Educators in Radiology. Dr. Shapeero serves on the Editorial Boards of Radiology and of Seminars in Musculoskeletal Radiology, and as an Editor of Academic Radiology.

James Smirniotopoulos, M.D., Professor and Chair, Department of Radiology and Nuclear Medicine, served as a Visiting Professor of Radiology at Harvard University from September 1, 1998 through June 30, 1999. Dr. Smirniotopoulos' scientific exhibit, "Congenital Cystic Masses of the Neck: Radiologic Pathologic Correlation," won a Magna Cum Laude Award at the 1999 meeting of the American Society of Neuroradiology. Dr. Smirniotopoulos also served as the moderator of a five-member panel during an image interpretation session of the Radiological Society of North America's 84th Annual Scientific Assembly in November of 1998. The panelists, addressing an audience of more than 25,000 radiologists, discussed a number of cases involving diagnostic problems, including chest, gastrointestinal, genitourinary, pediatrics, and neuroradiology.

Captain Jerry A. Thomas, MSC, USN, Chief of Radiological Physics, was active throughout 1999 in University, Navy, DoD, and National Health Physics endeavors. He serves as Chairman of the USUHS and Henry M. Jackson Foundation Radiation Safety Committees and as a member of the Automated Information Systems Policy Committee. As the DoD Technical expert in digital imaging, he provided technical oversight and guidance for the implementation of DIN-PACS aboard the Hospital Ships, MERCY and COMFORT, and at the National Naval Medical Center, the Naval Hospital Lemoore and the Naval Medical Clinic Key West. CAPT Thomas was a key contributor to the Navy's Radiology Strategic Plan and Business Case Analysis (BCA). This plan and BCA serve as the basis for Radiology systems proliferation through Fiscal Year 2005. At a national level, CAPT Thomas served as the President-elect of the Health Physics Society's Medical Health Physics Section. His research has involved digital mammography. He currently works closely with the University of South Florida in a multi-institutional digital mammography study with the General Electric DMR 2000 D digital mammographic x-ray machine; there were six publications at National conferences and meetings resulting from this work during 1999.

The 1999 AMEDD Radiology Course, 29th Annual Meeting, sponsored by the U.S. Army Medical Command and USU, was held at the University from April 26 through 30, 1999. The meeting was designed to provide military and civilian radiologists with an opportunity to update their skills and knowledge, acquaint them with new advances in imaging (especially those in the areas of chest radiology, body imaging, mammography, musculoskeletal system, pediatric radiology, and child abuse), and to provide an opportunity for them to discuss clinical and scientific problems arising at their individual duty stations.

Section of Medical Jurisprudence.

Current Issues in Federal Sector Health Care Law, a federal sector health care law symposium, was held on May 17-18, 1999, at the University. The meeting was sponsored by the USU Section of Medical Jurisprudence; it addressed the unique issues confronting the federal government's health care systems. Featured topics included: Medicare Subvention; TRICARE Legal Issues; Emerging Confidentiality Issues; the National Practitioner Data Bank; the Fraud and Abuse Data Bank; Medical-Legal Ethics; and, Relations with Non-Federal Entities.

Surgery - School of Medicine.

Distinguished Professor Lecture Hosted by the Department of Surgery. On July 8, 1999, the SOM Department of Surgery hosted the first "Francis Moore Distinguished Surgical Lecture" program. The 1999 featured lecturer was **John A. Mannick, M.D.**, who is the Distinguished Mosley Professor of **Surgery** at Harvard University. Dr. Mannick's presentation was entitled, "Effect of Injury on Host Defenses." **Dr. Francis Moore**, for whom the new lecture is named, was a member of the USU Board of Regents appointed by **President Gerald Ford** in 1975, and who served until 1982. Dr. Moore was presented an honorary degree by USU in 1996. He presented the annual David Packard Lecture, as well as the commencement address for 1996. Dr. Moore has served on the visiting board of the USU Department of Surgery for over 21 years; and, was recently honored with the establishment of an endowment for lectures by the USU Surgical Associates, of which he was a former President.

The Visiting Board. The Visiting Board of the Department of Surgery, provided expertise and experience that continues to be of high value to the USU mission. **Drs. David Sabiston, Francis Moore, Harris Shumacker, Michael DeBakey, Donald Custis, Leonard Heaton, Carleton Mathewson, Charles Rob, Oliver Beahrs, Patrick Daly, William Blaisdell, John Mannick, and George Sheldon** have provided valuable guidance at the semiannual meetings. The most recent meeting was held in December of 1999. The next meeting is scheduled for March 19, 2000.

USU **SOM Department of Surgery** hosted the 27th Annual Vascular Surgery Seminar of the Society for Military Vascular Surgery on December 2-4, 1999. Guest speakers from both the University and outside medical institutions presented discussions during the seminar.

William R. Drucker, M.D., Professor, Department of Surgery, wrote his perspectives on the unique features of military surgery in support of the Military Unique Curriculum Project under the direction of Professor of Surgery and **Associate Dean for Graduate Medical Education, Howard E. Fauver, M.D.** Dr. Drucker's perspective is that of an internationally known trauma surgeon and researcher with expertise in wound healing and an excellent reputation as a surgical educator.

Colonel Christoph R. Kaufmann, MC, FACS, MPH, USA, Associate Professor, Department of Surgery, continued to work with the Committee on Trauma, American College of Surgeons, to develop a chapter entitled, "Advanced Trauma Life Support in the Austere Environment." His expertise in Trauma, Public Health, and Diploma in the Medical Care of Catastrophes (DMCC) have led to his serving in a consultative role to three foreign nations and work with the American International Health Alliance.

Major Kaveh Khajavi, USAF, MC, Assistant Professor, Department of Surgery, and Colonel Bahman Jabbari, MC, USA, Professor and Chair, Department of Neurology, co-authored a paper entitled, "Medullary Dystonia." The paper appeared in the July 1999 issue of Movement Disorder Journal, Volume 14, pages 698-700.

Commander Peter M. Rhee, FACS, MPH, USN, Assistant Professor, Department of Surgery, published nine articles on hemorrhagic shock and combat casualty care in various publications throughout 1999. **Commander Rhee** and his team of investigators also have submitted, or are ready to submit, eight additional papers related to resuscitation of trauma patients. The timelines and quality of his work has attracted the attention of national critical care organizations and the Medical Officer of the United States Marine Corps.

J. Leonel Villavicencio, M.D., Professor, Department of Surgery, received an honorary membership in the German Society of Phlebology, Deutsche Gesellschaft für Phlebologie. The society, which is located in Bonn, Germany, contributes to the understanding of the pathology, diagnosis, and treatment of venous diseases. It is the second major international recognition for Dr. Villavicencio in as many years. In 1998, he received the Degree of Academico Honorario, the highest academic honor offered by the Mexican Academy of Surgery.